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THOMAS JEFFERSON'S FARM BOOK: A REVIEW ESSAY

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South Salem, New York

Many times have I argued as to which was the greater man, Jefferson or Lincoln, or Washington or Franklin. Usually I have urged the merits of Jefferson as the most outstanding American of all time.

Now, after going over the 170 facsimile pages of the Farm Book as well as the 500 other pages of Jeffersonian agricultural correspondence as included in this massive $15 work edited by Edwin Morris Betts for the American Philosophical Society, my respect and deep sympathy for him as a man carrying a great load cheerfully is enormously enhanced.[1] Undoubtedly he was a great experimenter and innovator who first set forth clearly certain agricultural truths. And yet as I perceive the type of life he was forced to lead as a result of his inheritances and experiences, I cannot help reaching the conclusion that Lincoln, under necessity of working hard with his hands in youth, was definitely closer to the American ideal than Jefferson. On the other hand, we cannot imagine the moody Lincoln carrying in a balanced way the great load which Jefferson handled so fruitfully over so many decades.

The very heart of the facsimile Farm Book from page 61 to page 123, entitled "Aphorisms, Observations, Facts in husbandry," was conceived apparently about 1772. Not yet 30, the young Jefferson mapped out and assigned pages long years in advance to the different farm subjects on which he wished to make observations—the farm machinery, the farm buildings, the fences, the roads, the animals, the plants, the rotations, the overseers, the workers, the mill, the brewery, the tenants, etc. Some of these headings on page 61 must have been added after 1772. As is to be expected of anyone who engages in agricultural experimentation, he has very little about the mold-board plough (one of his greatest contributions) in his discussion of farm machinery except a reference to a page which was missing from his Farm Book. (How I would hate to be judged with regard to any work I may have done in plant breeding by any records I may have kept. Of my agricultural experimentation, I have not left and do not intend to leave a tiny fraction as much as Jefferson left.) Neat half-pages on the Harrow and Roller are blank. Under hoes, the most interesting notation is that a laborer will weed 500 corn hills a day. This probably meant 60 or 70 hours of man-labor per acre. Elsewhere it appears under "horses" that a horse will cultivate 2000 hills of corn a day, or perhaps half an acre. With three cultivations and the necessary labor of harvesting and planting, it is probable that it took about 200 hours of man-labor to take care of an acre of corn. This is less than it takes in Mexico today but in the corn belt an acre can be taken care of today with only about one thirtieth as much labor. Jefferson never liked corn and tried continually to get away from corn but he always had to come back to it. Again and again in the fall of the year he had to plan on just how much corn he would have to buy to feed his slaves and his pigs and his horses. Jefferson was one of the first to announce the ten to one corn-hog ratio. He did it on page 75 of his Farm Book by saying: "every bushel of corn adds 10 pounds to his [the pig's] weight." Jefferson's slant against corn is indicated when he says that they prefer a peck of wheat flour to a peck and a half of Indian meal; again when he quotes D. Ross as saying that a bushel of rye will go as far in feeding horses as 5 bushels of corn; and again when he says that $7 worth of fish will go as far in satisfying workers as $16 worth of pork. Jefferson just did not want to be a corn-hog man no matter how much events and the pressure of his people might force him in that direction. On page 75 of his Farm Book, Jefferson sets it down as an aphorism that there should be a brood sow for every two laborers. He apparently had pretty good hogs because he indicates that when he put them on a full feed of corn, they gained a pound and a half a day.

On page 86 of his Farm Book is three fourths of

[1] *Thomas Jefferson's Farm Book with Commentary and Relevant Extracts from other Writings.* Edwin Morris Betts, ed. [Memoirs of the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge, Volume 35.] (Princeton, Published for the American Philosophical Society by Princeton University Press, 1953, xxii, [facsimile 178], 577 p., preface, introduction, facsimile of Jefferson's Farm Book, appendices, bibliography, index, illustrations, $15.00.)

a page set aside for Indian corn but the only entry made has to do with directions for applying tar to corn previous to planting, and that a bushel of corn will plant eight acres when the kernels are planted in rows five and one half feet apart and the kernels in the row are two feet apart. It is hard to see how a bushel would have planted only eight acres. He does not make it quite clear whether he dropped the kernels at the above mentioned rate or whether, after the ravages of the birds and squirrels, he expected to end up with plants as spaced above. He must have figured that more than one half of the corn he planted either did not grow or was destroyed before making a plant. We in the corn belt today plant more than three times as thickly, setting our objective at more than 10,000 stalks per acre as compared with Jefferson's less than 3,000 stalks. In spite of our thicker planting, we expect to get about seven acres to the bushel.

So far as his Farm Book is concerned, Jefferson's chief discussion of corn culture is under the heading of Potatoes, where he quotes G. Washington as saying: "one way is to drill the corn in 8. f. rows and 18 I. apart in the rows and then to drill the potatoes between. with good ploughing this is the best method." He writes that Peters has tried this method for many years and that he gets 40 bushels of corn and 120 bushels of potatoes to the acre. Without commercial fertilizer and only a limited amount of manure, these were exceedingly good yields. Jefferson quotes Parker as saying that June is the best time for planting potatoes, by which time the corn may have been worked over three times. Apparently in the Virginia of 200 years ago, corn was cultivated three times, just as is the case in the corn belt today. In addition, there was the hand hoeing in Virginia, which is almost never practiced in the corn belt. The device of planting corn in alternate rows which Jefferson, Washington, and Parker used has been started again in some parts of the corn belt in recent years but ordinarily in the corn belt we use soy beans or a soil building crop instead of potatoes.

Jefferson in his low esteem for corn sometimes turned to strange crops as for instance when he says in a letter to George Washington:

> in spite of all I can say, if there is the smallest discretionary power allowed them, they will fill the land with Indian corn; altho' they have the demonstrable proof, at every step they take, of its destructive effects. I am resolved however, as soon as it shall be in my power to attend a little more closely to my own concerns, to make this crop yield, in a great degree; to other grain; to pulses and to grasses. I am beginning again with Chiccory with a handful of seed given me by Mr. Strickland.

This was in 1795. The following summer Jefferson again wrote Washington that he had invested Twelve Pounds Sterling in Chicorium or Succory seed and that Mr. Strickland and Mr. Young speak of chicory in "exalted terms" and that his chicory has come up but is having a hard battle with the weeds.

That Jefferson was an incurable experimenter whose practical insight was sometimes dimmed by the fact that he had something new to distribute to neighbors, is indicated by his growing chicory for more than 20 years and was still sending seed of this weed to neighbors at the age of 75. In 1811 he wrote: "I know of no plant so valuable for green feeding and mr Strickland told me they cut up the dry plant in England and fed their horses with it." Chicory was definitely one of the Jefferson-Washington experiments which depleted their pocketbooks and did not contribute to their ultimate fame as agriculturists.

Of course Jefferson's instincts about corn as a soil destroyer were fundamentally sound but so also were the reactions of his overseers who knew they had to grow corn to get by. To solve the problem, Jefferson set to work year after year, beginning in 1789, to discover a rotation of crops which would save his soil, feed his Negroes, and give him a certain amount of profit. And incidentally, and this must never be forgotten, give him the joy of trying something new. Because he had recently returned from spending some years in France, his tendency was to experiment with seeds imported from Europe. For a time he experimented with peas and vetch. On page 97 of his Farm Book, he gives peas one year out of seven in his proposed rotation. At the same time, George Washington, with whom Jefferson kept in close touch on the subject, was using buckwheat as a soil building crop instead of peas. Both men were, of course, absolutely sound in relying on red clover as their chief soil building crop. Both had tried alfalfa but without success. It was 100 years before Hellriegel and Wilfarth would demonstrate just why and how it was that legumes were so good for the soil. Nevertheless, both Jefferson and Washington reached out for peas, clover, and vetch to improve their soil. Of course the European field pea is a cool weather crop and I cannot imagine that Jefferson had any great

success with its use. Probably he lost money trying to use it longer than he should have. On page 97 of his Farm Book and in his letters it would appear that Jefferson tried in the main to have a rotation of wheat two years in seven, corn one year in seven, peas one year in seven, barley one year, and clover two years.

Wheat and tobacco were the big money crops. For some reason he never includes tobacco in his rotation. Apparently he hated the growing of tobacco and yet he had to grow it to get money. It destroyed his soil and it was a headache to market because the crop was often spoiled in water transit. The numerous letters about tobacco would indicate that while it brought in considerable sums of money, the possibilities for misunderstanding and controversy were very great. After reading some of the Jefferson tobacco correspondence, I marvel at his capacity to say in his April 8, 1816, letter to John Adams: "You ask if I would agree to live my seventy or rather my seventy three years over again? To which I say, yea. My temperament is sanguine. I steer my bark with Hope in the head, leaving Fear astern." Yes, it would take a sanguine temperament to carry on the endless correspondence, to supervise the multitude of details, to put up with the rascality of overseers, to suffer continuous disappointments with weather and insects, to face the necessity of selling off land to meet debts—and yet in spite of it all to face courageously ahead and try new experiments in many fields. To raise tobacco with slaves, market it through careless, ignorant, and often dishonest men, to realize it was destroying your soil and yet to carry on "with Hope in the Head"—here we have the measure of a man who held his balance in the midst of day by day difficulties which taxed his strength but never undermined the source of his strength.

No American of his day made such a great effort to introduce plants from Europe. In retrospect it is easy to be critical of some of his enthusiasms. The olive trees that he sent to Monticello and South Carolina certainly did not work out. In the case of rice, his enthusiasm was so great that he hired a smuggler to get rice seed out of an area of northern Italy where exports were prohibited under pain of death. Also, he himself traveled to this area and ran the risk of taking rice seed out on his own person under pain of death. This he did for the sake of Georgia and South Carolina and not under the illusion that it would be of service to his own farming operations.

In a way he was a one-man Department of Agriculture, Extension Service, farm machine inventor, and Office of Plant Introduction. He might almost be said to be our first farm economist, endeavoring as he did to keep records of hours of work required for different farm operations.

The student of agricultural engineering will find it interesting to go over the Farm Book for the purpose of studying Jefferson's mathematics and physics as he applied them to drawings for farm buildings, ploughs, threshing machines, nail factories, spinning and weaving. In drawing plans for mechanical purposes Jefferson seems to have had a very considerable skill. He must have had one of the best agricultural engineering brains of his day.

Gentleman farmers who delight in horseback riding will find a kindred soul in Jefferson who at the age of 81 wrote: "I can assure you from experience that to old age the daily ride is among the most cheering of comforts. It renews the pleasureable sensation that we are still in society with the beings and things around us and so delightful and so necessary is this daily revival to me, that I would wish to lose that and life together." What an optimistic spirit on the part of a land-poor man facing bankruptcy as a result of the great price decline following the Napoleonic wars! Of course in Jefferson's day, horses had a utility infinitely beyond that of today. But Jefferson had a far deeper interest in horses than in their utility. He was a horse breeder who kept pedigrees in great detail. He knew and loved them as individuals. His riding and carriage horses traced back to the best English racing stock. No doubt he spent a considerable part of his waking hours riding around Monticello, going over to Poplar Forest, and letting the people working his 10,000 acres of land know that he knew what was going on. How innumerable must have been his trips over the years to Philadelphia, New York, and Washington by carriage or horseback. Jefferson did not actually race his own horses. But he loved horse races and displays of horsemanship almost up to the day of his death. The gentlemen farmers of his day and for more than 100 years thereafter loved to put on a dazzling display with the quality of their horses and shining carriage and new harness. For all his egalitarianism, Jefferson seems to have been true to his class when it came to horses. At the same time, he was practical enough to know that when it came to heavy hauling and farm work, mules were superior to either horses or oxen.

As an animal breeder aside from horses, Jefferson seems to have been most interested in sheep. Robert Morris had a sea captain who smuggled a Spanish ram of a semi-Merino type out of Spain. This ram was mated to his daughters and then to his granddaughters and then to his great granddaughters. These inbred sheep seemed to have produced unusually good wool but no doubt they must have lacked a certain amount of vigor because while he was President he began to cross them with the Iceland, broadtail Barbary, and the Senegal. He thought the Barbary and Senegal produced a mutton of a superior flavor.

Jefferson's unusual interest in sheep was greatly increased during the closing years of the Napoleonic wars by a strong feeling that it would be good for the United States to produce as nearly as possible her own wool and the clothing made out of that wool. He wanted to get his cross of the Spanish Merino and Barbary sheep disseminated as widely as possible and spoke in one letter of giving a full blooded ram to every county as fast as they could be raised. In 1811 Jefferson ran into one of the pitfalls which from time to time confront the man who is eager to disseminate far and wide a new strain of plant or animal. In December of 1810 he was all enthusiasm about a special importation of Merinos in which both he and President Madison participated. This importation he had engaged in solely for the general good. But motives of this high type are not necessarily insurance against disaster. By March he had discovered that the new Merinos had scab, and moreover, all the other people who took part in that importation found their sheep had been infected. Almost at once he learned that a decoction of tobacco served to check the scab. For 100 years the remedy for scab which Jefferson learned about in 1811 was used. In five months he had eradicated the scab. Then a new trouble appeared. The Merino wool was too fine for the local methods of spinning and weaving. By December of 1812 Jefferson was writing that the Merino fever had subsided and that the farmers would not accept them; the Merinos produced less wool than other sheep, and in the state of Virginia there was no market for Merino wool. Jefferson had started with the idea of giving Merino rams away or selling them at a very low price but by August of 1813 he found he could not even give them away. Merinos were still in strong disfavor in 1817 but his original semi-Merino Spanish sheep which he had started on an inbred basis from the Robert Morris ram in 1792, mixed to some extent with the Barbary sheep, proved to produce a practical type of wool for the Virginia market, and quite good mutton, especially when crossed with the Barbary.

When Jefferson's and Madison's overseers got together to talk over the appearance of the first importation of really full blooded Merino sheep, their remarks were priceless about what the former President and the current President had done. The new sheep were denounced as "little bits of things" and Madison's overseer said he would not give a riding whip for the whole lot. Jefferson's overseer indicates he got very good prices for Merino rams for a time, whereas Jefferson's own letters indicate much lower prices. Jefferson's strenuous efforts to build up a spinning and weaving industry at Monticello kept step almost precisely with his sheep breeding efforts. In a letter to Thaddeus Kosciusko in 1812, he says that one sheep per person will furnish sufficient wool clothing, and that the number of sheep in Virginia and the states to the north was now almost up to that level. The War of 1812 certainly furnished a great stimulus to the American textile industry, and Jefferson, the internationalist, was one of the leaders in the movement to make America independent in an economic as well as a political sense.

Jefferson was peculiarly susceptible to the enthusiasm of others about new agricultural ideas and it is always hard to say what part of his agricultural practice was based on his own good sense and what part was derived from others. He went overboard in a big way for land plaster on the basis of the experience of a Virginia farmer by the name of Binns. Some of his ideas were undoubtedly derived from George Washington's experience at Mount Vernon and the observations of Willial Strickland and Dr. Logan of Pennsylvania. Always open minded, always willing to risk backing a new idea, he shifted over very rapidly from a strictly exploitive agriculture as practiced just before the Revolution to an agriculture based on full utilization of both animal and green manures, with enough land plaster added to facilitate the growing of clover. Probably it would have been better for his pocketbook if he had used more marl and less land plaster. But considering the state of agricultural science in that day, he came remarkably close to fundamentally sound soil practices.

To a Northerner, the most baffling part of the Jefferson farm economy is that related to the han-

dling of slaves. Here we find Jefferson with his 200 slaves torn in so many different directions. On the one hand, he was convinced that Negroes by heredity were just as good as anyone, and was delighted in his letters to call attention to that Negro mathematical genius who was helping to lay out the city of Washington. Continually he raised the question of how the slaves might be freed. In a letter written in 1805, he spoke of the insurrectionary spirit among the slaves which he said could be easily quelled at first, but he visioned that after every defeat "it will rise more formidable until we shall be forced after dreadful scenes and sufferings to release them in their own way, which without such sufferings we might now model after our own convenience." Yes, Jefferson in 1805 saw the March of the Common Man and wanted to lead that march into constructive channels. Jefferson did not have his way. The course of destruction was followed but the March of the Common Man was not stopped. In the main, Jefferson was a most beneficent slave owner, thinking continually how to provide food and clothing for his slaves and how to lay out a proper sequence of work. He tried to keep families together and to avoid selling slaves except when he had to to pay his debts. In 1820, he wrote that a negro "woman who brings a child every two years is more profitable than the best man on the farm." He had a lot of trouble with a young Negro by the name of Jame Hubbard, who ran off repeatedly. In 1812, he writes Reuben Perry that he had Jame Hubbard flogged severely in the presence of his old companions and committed to jail. He assumes that the moment Hubbard is out of irons he will be off again, and urges that he be sold out of the state. Hubbard was finally sold for $300. Hannah's Billy caused even more trouble and Jefferson referred to him as a "consumate, bloody minded Villan." He attacked an overseer with a stone in each hand and then bit his thumb severely. Billy was put in jail but two years later, in 1821, Joel Yancey, an overseer, reported: "Billy is still out and have joined a gang of Runaways and they are doing great damage to the neighboring stock, considerable exertions have been made to take them but without success."

The fundamental problem with the slaves was to get enough work out of them so that the output of their labor would feed and clothe them. Jefferson, a most humane man, who believed that the sentiments of the preamble of the Declaration of Independence applied to all human beings, was up against a most serious practical problem, especially after the big price decline began about 1815. Probably his establishment for making nails was his best device for getting productive nonagricultural work out of his slaves. Slaves were used for weaving, spinning, tanning of leather, making of charcoal, carpentering, and a great many other nonagricultural enterprises which were essential to making Monticello and Poplar Forest as nearly self-supporting as possible.

Those who visit Monticello today and see the self-sufficiency of the place as it existed 150 years ago are tempted to look on the life led on the mountain top as an idyllic existence. Actually, it required a vast amount of planning and detailed correspondence. It was obviously a continual headache to the man who had to carry the responsibility. However, we should say that Jefferson never admitted it was a headache. He just kept on working and planning to the very end. A New England or Midwestern farmer would have hated the life at Monticello. To them, farming consists in doing fully half the farm work with their own hands. There is little evidence that Jefferson ever did any work with his own hands, although he certainly got into the most intimate mechanical details. Actually, Jefferson in a way was the whole future of the United States in embryo. He was by instinct and temperament as much a manufacturer as a farmer. He was an engineer who dammed rivers and built mills. I do not admire him the less because his dam and his mill turned out to be financial flops. The combination of bad weather and bad mill managers caused him a loss of probably $100,000 when everything is taken into account. He ran into a law suit on account of his dam when he was an old man, which must have been very trying to him, although in most of his contentions he was victorious. In 1809, just newly out of the Presidency, he must have found it a shock to receive from his daughter some comments on the man he had in charge of the mill, as follows:

> he is not a man of business. his bargains are ruinous to himself and moreover he has not one spark of honesty. his credit is so low that nothing but necessity induces anyone to trust him with their grain; and the general complaint is that it cannot be got out of his hands . . . . in short My Dear Father disagreeable as it is to tease you with tales of this kind I think it my duty to tell you the opinion of the whole neighborhood of the man . . . . you may depend on it that I have not exaggerated the reports . . . if it was in the hands of a tolerably

honest or industrious man it would be a public benefit. as it is by the time his lease is out it will be totally destroyed . . . and you will get nothing from it in the meantime.

In view of this letter, it is rather interesting to note that Thomas Mann Randolph, the husband of the daughter who wrote the letter, took over the lease when the lease of this unsuitable man expired. But Randolph and his successive partners and successors had no better luck even though the rent was changed from dollars to barrels of flour. I wonder if Martha ever reflected on the letter she wrote in 1809. No doubt her observations were just, but how much of a favor did she do her own husband when she got him into an unprofitable family arrangement?

In all he did Jefferson seems to have been a son of the Enlightenment (with all its shortcomings) of the period just before the French Revolution. He seems to have loved everything French and Italian: the architecture, the wines, the songs, the optimistic humanism with its belief in human nature and its perfectibility. A part of this is willingness to engage in endless experimentation in the belief that there is always a better way. On the whole, this experimentation no doubt caused Jefferson to take substantial losses. But he was a prominent part of the agricultural experimentation which was a joint enterprise of the best minds this nation has ever had.

I started reading this enormous book as a chore but gradually Jefferson began to stand out from his handwritten pages as a distinct entity. Everyone has been so enthusiastic about the Founding Fathers that it has become increasingly difficult for them to emerge as living human beings. It interested me to note that Jefferson's handwriting changed very little over a period of 50 years; that it was nearly always legible although he occasionally uses strange abbreviations. It is interesting to note that in the words where we use "ei" he nearly always uses "ie."

The Farm Book makes Jefferson appear to me as an enthusiastic optimist who nevertheless so disciplined his life and kept his mind on a wealth of practical details in such a way that he could continue to experiment his whole life long. In spite of the loss occasioned by several unsuccessful ventures, he was such a good farmer for his day that he would have shown a good profit throughout his life except for the fact of the post-Napoleonic war price collapse. I am rather surprised that he does not make more reference in his Farm Book to the cause of his economic difficulties during the last ten years of his life. I am all the more surprised because mathematically he was exceedingly aware of the various types of cost ratios entering into the very foundation of agricultural economics. In some ways he was the most distinguished of our early American agricultural economists. As an inventor and agricultural economist he was perhaps more distinguished than as an agricultural scientist where his optimism oftentimes led him a little astray.

Not a single one of our presidents lived so continuously and so fruitfully with agriculture for so many years. Our nation must be forever grateful that Jefferson in a practical way guided us from the very start in the appreciation of scientific agriculture, education, and democracy.

THE SEARCH FOR A STABLE WATER RIGHT IN MONTANA

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For nearly a century Montanans have been seeking property rights in water which are as definite and defensible as those in land. They have discarded the water right which they brought with them from the humid East and adopted a new one more suited to their needs. In creating procedures for acquiring and protecting this right, they provoked a controversy over the regulation of water rights which has not yet ended.

Early Montana ranchers and lawyers were familiar with the law of property rights in streams known as the Doctrine of Riparian Rights. This law had evolved in the eastern part of the United States and in England during the first half of the

nineteenth century and had become part of the common law.[1] Consequently, when the Bannack Assembly adopted "the common law of England" on January 11, 1865, it adopted the riparian doctrine.[2]

The pioneer lawyers found a classic statement of this doctrine in Chancellor Kent's *Commentaries*. The key sentence reads as follows:

> Every proprietor of lands on the banks of a river has naturally an equal right to the use of the water which flows in the stream adjacent to his lands, as it was wont to run . . . without diminution or alteration.[3]

This law is ill suited to the agricultural needs of Montana. In the first place, rights to the use of stream waters are restricted to riparian owners; that is, to owners whose lands form the banks of the stream. (The word riparian comes from the Latin word, *ripa*, meaning bank of the stream.) Certainly, a law which limits the right to use the water of a stream to riparian owners is unsuited to the needs of Montana where irrigation is necessary and much of the agricultural land is not adjacent to the rivers.

In the second place, this water law provides for equality of use. It gives every farmer whose lands border a stream an equal right to its use, but such a law presents difficulties when applied to the arid West. There is, for instance, more land in Montana than there is water to irrigate it. In many valleys, if there were an equal division of the stream among the water-users, there would not be enough water for each user to farm an economical unit. Moreover, in the West a riparian right varies with the flow and use of the stream. It increases with the rise of the stream and decreases with its fall. As more settlers move into the valleys and the demand for water increases, the riparian right decreases. Consequently, equality of use discourages investment and the development of a stable agriculture.

In addition, the Doctrine of Riparian Rights requires that the stream remain where it is accustomed to flow, undiminished in quantity and unimpaired in quality. This is a third characteristic of this humid-country water law which makes it unsuited to irrigated agriculture since irrigation not only causes the diminution of a stream, but frequently results in its temporary exhaustion.

Many of the early ranchers and lawyers quickly became aware of the inadequacy of this law and sought a substitute for it.

In the mountain gulches near Virginia City, Helena, and Diamond City, the miners were developing a different kind of water right. They had become acquainted with it in California and in Colorado. There the miners had applied the same rules to water as they had applied to their mining claims. As squatters on the public domain, they had applied to both the pay dirt and the streams the rule of the United States land laws that priority of appropriation gives priority of right—first in time, first in right. They had permitted miners to divert water for use on their claims whether those claims were riparian or non-riparian. They had restricted the amount of water that one could appropriate to that which he could use beneficially just as they had restricted the size of their mining claims to the area that a man could work out in a reasonable length of time.[4] Although many Montana placer miners favored an equal division of the streams,[5] these rules gradually became the law of the gulches.

Two acts of the territorial legislature extended the Doctrine of Prior Appropriation, as these rules were called, to agricultural pursuits. The first was a rather ambiguous act which the Bannack legislators borrowed from the statutes of Colorado and enacted without alteration on January 12, 1865. It authorized the diversion of stream waters and their application to both riparian and non-riparian lands. In case of scarcity, three commissioners were to divide the waters of a stream among the water-users "in a just and equitable proportion . . . with due regard to the legal rights of all."[6] Just what these phrases meant was not

[1] Wells A. Hutchins, *Selected Problems in the Law of Water Rights in the West*, U. S. Department of Agriculture, *Miscellaneous Publication* 418 (Washington, 1942), 38–39.

[2] Montana Territory, *Session Laws, 1864–1865*, p. 356.

[3] James Kent, *Commentaries on American Law* (13th ed., 4 vols., Boston, 1884), 3: 439.

[4] Sidney T. Harding, *Water Rights for Irrigation* (Palo Alto, 1936), 4; Thomas M. Marshall, "The Miners' Laws of Colorado," *American Historical Review*, 25: 426–39 (April, 1920); Ralph H. Hess, "Arid-Land Water Rights in the United States," *Columbia Law Review*, 16: 480–95 (June, 1916).

[5] Edith B. James, Claims Law and Miners' Courts of the Montana Gold Camps, 1862–1870 (unpublished M.A. thesis, University of Chicago, 1949), 26–27, 34.

[6] Montana Territory, *Session Laws, 1864–1865*, p. 367–69; Colorado Territory, *Session Laws, 1861*, p. 67–69.

explained, but when a controversy over the provisions of the law came to the territorial Supreme Court in August, 1870, the court declared that,

> Any tribunal, governed by the established principles of law, making an apportionment of water in accordance with what is just and equitable, would be compelled to hold that the one who first located the land, and claimed the water, was entitled to sufficient to irrigate his land; for equity declares that he who is first in time is first in right.[7]

In the meantime, the sixth legislature had clarified the law by repealing the section dealing with apportionment and enacting "that in all controversies respecting the rights to water . . . the same shall be determined by the date of the appropriation. . . ."[8]

Since most of the diversions for both mining and agricultural purposes were being made on the public domain, Congress was urged to legalize them by approving the evolving Doctrine of Prior Appropriation. This Congress did by the Act of 1866 which provided,

> That, whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same. . . .[9]

Thereafter, appropriative rights in Montana were protected by federal as well as territorial acts and decisions.

After these legislative and judicial actions, what was the status of the Doctrine of Riparian Rights in Montana? That remained a disputed question for more than fifty years. Other Western states either followed the example of Colorado and by constitutional provisions and court decisions abrogated the old doctrine, or they followed the lead of California and accepted both doctrines. Rights which were established while the land still belonged to the United States government were said by the California judges to be appropriative rights, but rights which accrued after the land was transferred to private ownership were said to be governed by the riparian law.[10]

Montana seemed to have a foot in both camps. After the adoption of the so-called California Practice Act in 1867, the Montana bar favored the decisions of the California courts. Chief Justice Decius S. Wade, whom many consider the most distinguished member of the territorial bench, favored in *Thorp v. Freed* the riparian doctrine. He feared that priority of appropriation would lead to "a monopoly of water" and he preferred the equality rule of the older doctrine, modified so as to permit diversion and diminution of the stream flow. Although Justice Hiram Knowles championed the appropriation doctrine in this case, he thought that after land passed into private hands the riparian doctrine prevailed.[11] After Montana became a state, the judges of the Supreme Court continued to speak of riparian rights, and writers on irrigation law during the first two decades of this century placed Montana in the California camp.[12]

On the other hand, the legislatures and the courts continued to define and perfect the appropriation right. When the constitution of Montana was being written, its framers incorporated a section which provided that the use of all appropriable waters in the state shall be considered "a public use".[13] This provision was similar to one in the constitution of Colorado which declared the waters of the streams to be property of the public and was construed by the

[7] *Thorp v. Woolman, Montana Reports*, 1: 171–72 (1870).

[8] Montana Territory, *Session Laws, 1869–1870*, p. 57.

[9] U. S. *Statutes at Large*, 14: 253 (1865–1867).

[10] John T. Ganoe, "The Beginnings of Irrigation in the United States," *Mississippi Valley Historical Review*, 25: 64–66 (June, 1938); Ralph H. Hess, "The Colorado Water Right," *Columbia Law Review*, 16: 649–64 (December, 1916); Ralph H. Hess, "The California Irrigation Right," *California Law Review*, 5: 142–59 (January, 1917).

[11] *Thorp v. Freed, Montana Reports*, 1: 651–87 (1872).

[12] Albert E. Chandler, *Elements of Western Water Law* (2nd ed., San Francisco, 1918), 17; Joseph R. Long, *A Treatise on the Law of Irrigation* (2nd ed., Denver, 1916), 69; Clesson S. Kinney, *A Treatise on the Law of Irrigation and Water Rights* (2nd ed., 4 vols., San Francisco, 1912), 1: 872; Samuel C. Wiel, *Water Rights in the Western States* (3rd ed., 2 vols., San Francisco, 1911), 1: 137; Hess, "California Irrigation Right," *California Law Review*, 5: 151; Jerome G. Locke, "Irrigation Reforms in Montana," *The Montana Engineering Journal*, 1: 49, 51 (1911); *Smith v. Denniff, Montana Reports*, 24: 20–31(1900); *Pacific Reporter*, 60: 398–402 (1900).

[13] *Constitution of Montana*, Article 3, Section 15.

Supreme Court as having a similar significance.[14] Yet, during all these years, no case came before the court in which there was a clear-cut controversy between a riparian right and an appropriation right—not until 1921.

The year 1919 was a dry year in Montana—the third in a series of dry years. Lacking sufficient irrigation water, the Ames Realty Company near Helena changed its point of diversion on the Prickley Pear Creek from a place below the ranch of Anna Mettler to a place on the stream above it and proceeded to divert the entire stream into the ditch. Although Mrs. Mettler had made no appropriation or diversion of the creek as it flowed through her ranch, she relied upon it for household purposes and for the watering of her livestock. Now it disappeared and the bed of the creek became dry. Basing her case upon her rights as a riparian owner, she sued the Ames Realty Company, demanding that the creek be returned to its accustomed channel and be permitted to flow as it was wont to flow. Here was a clear-cut controversy between a riparian right and an appropriation right. Did the riparian doctrine still prevail in Montana? The Supreme Court said, No—"Our conclusion is that the common law doctrine of riparian rights has never prevailed in Montana since the enactment of the Bannack Statutes in 1865, and that it is unsuited to the conditions here. . . ."[15] In this manner Montana discarded the Doctrine of Riparian Rights and joined the other Rocky Mountain states in adopting a water right suited to its arid environment.[16]

The water right created by the Doctrine of Prior Appropriation is a legal right to use the water of streams, according to the following rules: (1) Water may be diverted from the stream for use on riparian and nonriparian lands regardless of the diminution of its flow; (2) The appropriator who makes the first diversion has a first right to the use of the water to the extent of his appropriation; (3) The use must be beneficial. No right to use the water of streams can be acquired or maintained unless it is a beneficial use. In the language of the Reclamation Act of 1902, "beneficial use shall be the basis, the measure, and the limit of the right"; (4) When the use ceases, the right ceases. Such a water right is considered real property and its owner can not be deprived of it except by due process of law.[17]

The creation of a new water right necessitated the development of new methods of acquiring it. Riparian rights are appurtenant to the land bordering on the streams and are acquired with the title to the land. Consequently, Congress in enacting legislation for the disposal of the public domain failed to develop separate procedures for the acquisition of water rights. By the Act of 1866 it left this problem to the states.

For two decades Montana's ranchers followed the example of the miners and acquired their appropriative water rights by digging ditches and diverting water to beneficial use. Appropriations were dated from the commencement of ditches rather than from their completion, provided the rancher dug his ditch "with reasonable diligence."[18]

In one respect, however, the ranchers failed to follow mining practice: they made no provision for written registeries of their appropriations. As the settlements thickened and water during dry seasons became scarce, such records became advisable. The legislature at Helena was urged to act, but when a bill patterned after the California registry law of 1872 was introduced into the session of 1883 a lively debate developed. As usual some did not want to change and preferred the simple rules of the frontier. A majority passed the bill, but Governor John S. Crosby came to the aid of the minority and vetoed the measure. With a foresight sharpened by residence in Italy where he had been a United States consul, he pointed out that the bill placed "no limit to the volume of

[14] *Smith v. Denniff*, *Montana Reports*, 24: 20–31 (1900); *Proceedings and Debates of the Constitutional Convention Held in the City of Helena, Montana, July 4th, 1889, August 17th, 1889* (Helena, 1921), 895–901.

[15] *Metiler v. Ames Realty Co.*, *Montana Reports*, 61: 152–71(1921); *Pacific Reporter*, 201: 702–08 (1921); Montana Supreme Court Library Briefs, vol. 128, no. 4475, Brief of Appellant.

[16] Walter Prescott Webb, *The Great Plains* (New York, 1931), 431–39.

[17] *Metiler v. Ames Realty Co.*; *Montana Reports*, 61: 159–69 (1921); *Osnes Livestock Co. v. Warren*, *Montana Reports*, 103: 284–306 (1936); *Pacific Reporter*, 62: 206–15 (2nd), (1936); U. S. Census Office, 14th Census, 1920, *Irrigation and Drainage*, 35; Roy Elwood Huffman, *Irrigation Development and Public Water Policy* (New York, 1953), 43; Webb, *Great Plains*, 437.

[18] *Maynard v. Watkins*, *Montana Reports*, 55: 55–56 (1918); *Pacific Reporter*, 173: 551–2 (1918); James Heckathorn, "The Doctrine of Relation Back in Montana Water Law," *Montana Law Review*, 12: 87–97 (Spring, 1951).

water that can be controlled by prior appropriation" and warned that, if it were to become law, it would lead to excessive and speculative appropriations. Representative Caldwell Edwards of Gallatin county, where irrigators were having trouble over rights to the waters of Middle Creek, thought that the governor was unqualified by experience to take such action and urged his colleagues to override the veto, but instead they adjourned.[19]

One of the Middle Creek irrigators was John M. Robinson. He had been born in Tennessee, had served in the Confederate army, and had surrendered at Vicksburg. In 1865 he had come to Virginia City to pan gold, but, when the pay dirt failed to yield the expected returns, he had homesteaded in the Gallatin Valley and had taken a small ditch out of Middle Creek to irrigate his fields. Since he had not been the first to divert the water of this stream nor the last, it had soon become over-appropriated. By the early 1880's the former Confederate soldier and his neighbors were quarreling with later appropriators farther up the creek. In April of 1883, a few weeks after the governor's veto of the water-rights registry bill, they sought a settlement of their disputes in the courts. A decision in October was unsatisfactory and in the fall of 1884, John Robinson sought and won election to the territorial legislature. I do not know whether the water rights controversy prompted him to take this action, but he introduced into the 1885 session a registry bill which was very similar to the one which had been rejected two years earlier. This time there was little debate. Governor B. Platt Carpenter as well as a majority of the legislators seemed to agree with R. N. Sutherlin, editor of the *Rocky Mountain Husbandman*, that Montana needed "a law that would make water rights a matter of record since the Territory is now getting too old and too thickly settled for such important matters to be left to the memory of the settlers". The bill passed and became law on March 2, 1885.[20]

This statute which is still in effect is substantially a copy of a law enacted by the California legislature in 1872. In providing a second method of acquiring a water right, it requires that any person who desires to appropriate water must post a written notice in a conspicuous place at the point where he plans to divert water from the stream. The notice must state (1) the quantity of water claimed, (2) the purpose of the diversion, (3) place of intended use, (4) means of diversion, (5) date of posting, and (6) name of the appropriator. Within 20 days after the posting of this notice, the appropriator must file a copy with the county clerk of the county in which the appropriation is being made. Construction must begin within 40 days of the posting and continue with reasonable diligence to completion.[21]

These provisions require for water rights the same kind of registry as is required for warranty deeds and mining claims. This registry is also similar to the registries provided by the Federal land laws. The Homestead Act, for instance, required that claims to quarter sections of the public domain be filed in a land office. Like the Homestead Act this statute states certain conditions which have to be met before a right can be perfected and provides a method of proving up.

The two methods, however, are very different. Whereas the Homestead Act made proving up an administrative procedure, the Montana statutes leave the determination of water rights to private litigation and the courts. In order to determine the number of appropriations which have been perfected as well as the quantity and priority of each appropriation, one or several appropriators of a stream may initiate a water-right suit. This action is an adaptation of the bill of peace, which was originated by the English courts of equity, to the needs of irrigated agriculture. It enables the plaintiffs to make all the other claimants parties to the suit. A judge of a district court examines the claims of all the claimants and

[19] Helena *Weekly Independent*, March 1, 8, 1883; *Rocky Mountain Husbandman* (White Sulphur Springs, Montana), March 15, 1883; Montana Territory, *Session Laws, 1883*, p. 318; Tom Stout, *Montana: Its Story and Biography* (3 vols., Chicago, 1921), 1: 408.

[20] *Progressive Men of the State of Montana* (Chicago, n.d.), 820–21; Samuel Fortier, "Irrigation in Montana," U. S. Department of Agriculture, Office of Experiment Stations, *Bulletin 172* (Washington, 1906), 37–42; Montana Territory, *House Journal*, 1885, p. 45, 173, 198; *Rocky Mountain Husbandman*, January 29, 1885.

[21] Montana Territory, *Session Laws, 1885*, p. 130–33; *The Civil Code of State of California* (1st ed., 2 vols., San Francisco, 1874), 1: 402–05; California, *Session Laws, 1871–1872*, p. 622; *Bailey v. Tintinger, Montana Reports*, 45: 167–68 (1912); *Pacific Reporter*, 122: 575–84 (1912).

establishes by decree the rights of each one in the stream.[32]

If there is not enough water in a stream to satisfy all of the decreed rights, it becomes necessary for some officer to divide what there is among the water users according to their priorities. A law enacted in 1899 and frequently amended authorizes a district judge when petitioned by the owners of at least 15 per cent of the decreed rights to appoint such an officer. He is known as a water commissioner. As the stream flow increases and decreases, he has the authority to open and close headgates in accordance with the priorities established by the decree.[33]

Similar procedures for the acquisition, determination, and administration of water rights were at one time or another adopted by all of the eleven Western states. However, in all of these states, including Montana, they were found more or less unsatisfactory.

The practice of filing notices in the county courthouses had many disadvantages. Since the laws failed to restrict the amount of water which could be claimed, appropriators generally claimed too much. As Governor Crosby had warned, this resulted in exaggerated and speculative filings. Claims were often filed to many times the amount of water in the stream. In California, for instance, claims to the San Joaquin River amounted to 172 times its average flow! Nor did these include the six claims to all the water in the river. In Montana, where irrigation water is measured in miner's inches, claims to the West Gallatin River's average flow of 56,125 inches aggregated 315,456. Six appropriators each claimed all of Lyman Creek near Bozeman. The first filing on Trout Creek in Lewis and Clark county was for four times its average discharge. By 1913, enough water was claimed from Montana streams to irrigate an area twice the state's size.

Another weakness of the registration laws was their failure to provide for any proving up until rights were determined by adjudication. No record was kept of completion of construction and the application of the water to beneficial use. Consequently, until adjudication, which was delayed as long as possible, no one could distinguish in the county clerks' offices the perfected claims from the unperfected ones.

The county clerks' records were incomplete in two other respects. Streams generally flow through more than one county. Since the Big Horn River flows through four Wyoming counties, its water-right records were found in four county courthouses. Similarly, all over the West the water right records were dispersed at one time in many county seats, rather than collected at the state capitols. In addition, appropriations by the older method of digging a ditch and diverting the water without posting and filing a notice were also legal. Consequently, filings in the county clerks' offices rarely included all the appropriations.

Proving up by court adjudication was costly. Samuel Fortier, one-time Director of the Montana Agricultural Experiment Station, estimated that it finally cost John Robinson and his neighbors $13,000 to prove up the water rights on Middle Creek in the Gallatin Valley. It was estimated that lawyers' fees came to $60,000 in 1909 for the determination of rights on the neighboring West Gallatin River. Frequently, the court decision was either challenged or forgotten and the rights to a stream litigated several times. Nor were the decisions of the court always satisfactory. The judges were usually not informed about hydrography and water measurements and the contestants sought by foul means as well as fair to get as much water as possible with the result that they usually got more than they needed.[34]

Administration of the streams by water commissioners appointed by the courts also had drawbacks. Since the appointments were usually

[32] George Y. Patten, "Water Rights in Montana," *Rocky Mountain Law Review*, 23: 169–70 (December, 1950); Moses Lasky, "From Prior Appropriation to Economic Distribution of Water by the State—Via Irrigation Administration," *Ibid.*, 1: 189–90 (April, 1929).

[33] Montana, *Session Laws, 1899*, p. 136–37; Howard W. Heman, "Water Rights under the Law of Montana," *Montana Law Review*, 10: 31–33 (Spring, 1949).

[34] Elwood Mead, *Irrigation Institutions* (New York, 1903), 69–81, 301–08; Elwood Mead, *Report of Irrigation Investigations in California*, U. S. Department of Agriculture, Office of Experiment Stations, *Bulletin* 100 (Washington, 1901), 232; Fortier, "Irrigation in Montana," 34–43; Elwood Mead, "Water Rights on the Missouri River and its Tributaries," U. S. Department of Agriculture, Office of Experiment Stations, *Bulletin* 58 (Washington, 1899), 53–58; T. Moffet Gilkerson, Montana Water Rights Administration (unpublished M.S. thesis, Montana State College, 1944), 36–47.

temporary, it was difficult to obtain capable men. The appointments were often delayed and, when they were made, they were for the regulation of only a portion of the stream system rather than for the entire watercourse.

Because of these inadequacies Western water-users sought and developed better methods of acquiring, determining, and administering water rights. The first steps were taken in Colorado where, after a conflict over water rights on the Cache la Poudre River, the farmers met in Denver and formulated a plan which was enacted into law by the legislature of 1879 and 1881. The new system was distinctive in its provision for the use of referees in definitive court adjudications and for state-wide administration of the streams under the direction of an officer known as a state engineer. One of the first assistants employed by the new state officer was a young instructor at the Colorado Agricultural College by the name of Elwood Mead. As he helped to put the Colorado System into operation, he became aware of certain weaknesses, an awareness which was shared by some of the Colorado irrigators. Their objections centered on the filing of notices in the county courthouses and on the adjudication of water rights by the courts.[25]

The next steps in the evolution of a better water right were taken in Wyoming, where the legislature adopted the Colorado System and the governor appointed Elwood Mead as the first territorial engineer. Mead came to Cheyenne in 1888 and the next year was able to assist the Wyoming Constitutional Convention in the preparation of Article VIII dealing with irrigation and water rights. When this constitutional provision was supplemented by legislation, the Wyoming System was born.[26]

This system provides for state supervision of the acquisition of water rights and their recordation in a central office. One who wishes to appropriate water must apply to the state engineer for permission. If there is no unappropriated water in the stream or if the diversion would be detrimental to the public interest, the permission is refused. If it is granted, the appropriator builds his ditch. When he has finished it, he presents proof of that fact and the state engineer issues him a water-right certificate.

Water rights acquired before 1890 are determined not by the courts, but by an administrative board known as the state board of control, composed of the state engineer and four divisional superintendents, who are also engineers. This engineering board initiates the adjudication, surveys the irrigated lands, measures the stream flow as well as the capacities of the ditches, and requests a filing of the claims by the water-users. Like a court, it takes testimony, conducts hearings, and then on the basis of the collected evidence it determines the water right of each claimant. The statute ties the water to the land and prohibits the allocation of more than one cubic foot per second for each 70 acres of irrigable land. The determination may be contested in the courts, but after a certain time it becomes final and irrevocable.

Adjudication by an administrative board was immediately attacked by the lawyers as a violation of the separation of powers principle and a usurpation of judicial functions. These objections were met in Oregon by having the state engineer file his determination of rights with the circuit court for reexamination and judicial action.

These procedures created rights in water as definable and as stable as those in land. They curbed frontier individualism and forced it to submit in the appropriation of water to the control of the state.

The administration of water rights in Wyoming is patterned after that of Colorado. The state is divided into four water divisions which in turn are divided into water districts. In charge of each division is a superintendent who has jurisdiction over the water commissioners in the water districts. The hierarchy is, of course, headed by the state engineer.[27]

One by one all of the seventeen Western states have abandoned the old methods of acquiring, determining, and administering water rights and

[25] Robert G. Dunbar, "The Origins of the Colorado System of Water-Right Control," *The Colorado Magazine*, 27: 241–62 (October, 1950).

[26] Wyoming, *Session Laws, 1890–1891*, p. 91–106; William E. Chaplin, "Reminiscences of a Member of the Wyoming Constitutional Convention," *Annals of Wyoming*, 12: 191–92 (July, 1940).

[27] Harding, *Water Rights for Irrigation*, 138–76; Chandler, *Elements of Western Water Law*, 52–83; *Wyoming Irrigation Laws Compiled by State Planning and Water Conservation Board* (Cheyenne, 1949), 1–54; Samuel C. Wiel, "Determination of Water Titles and the Water Commission Bill," *California Law Review* 2: 435–40 (September, 1914); Orson W. Israelsen, "Legislation Concerning Water Rights," Utah Experiment Station, *Circular 38* (Logan, 1918), 3–19.

have adopted either the Colorado or the Wyoming system or modifications of them—all except Montana. In this state, although a vocal minority has tried no less than six times to persuade the legislature to adopt new methods, the people have remained loyal to the old ones. The six attempts at radical change in Montana's irrigation institutions were led by engineers and by ranchers who had had experience with the new methods in other states.

The Montana Society of Engineers led the first attempt. As early as 1889, it cited the example of Colorado and petitioned the constitutional convention to create the office of state engineer. The convention, however, preferred to leave such matters to the state legislature.[28]

Ten years later the engineers approached the sixth legislature. They drew up a bill providing for a state engineer with duties restricted to measurement of stream flow, surveys for reservoir locations, and approval of dam construction. One of their members, Representative Elliott A. Wilson of Butte, introduced the measure. It passed the House, but, as the Helena *Independent* expressed it, the bill met "a sudden and inglorious death" in the Senate, where a majority supported the motion of Senator Charles W. Hoffman of Gallatin county that action on it be posponed indefinitely.[29]

The engineers did not give up. In 1903 they urged the adoption of the Wyoming System. Their leader was E C. Kinney who was superintendent of a large corporation-owned canal which diverted water from the West Gallatin River. He had experienced trouble over water rights on this unadjudicated stream during the dry season of 1901 and, after a discussion during a meeting of the Montana Society of Engineers, he took the initiative in drawing up a bill which was almost an exact copy of the Wyoming code.[30]

At the same time the Assistant State Examiner, F. H. Ray, was conducting an investigation of the State Arid Land Grant Commission which had been created in 1895 to supervise the reclamation of the Carey Act lands. During this investigation he became impressed with the fact that "Wyoming had reclaimed much more land, under the Carey Act, than any other state". Further study convinced him that Wyoming's primacy in this matter was due to her superior water-right laws.[31]

As was natural, the two men soon joined forces. They enlisted the aid of Director Samuel Fortier of the Montana Agricultural Experiment Station who was an irrigation engineer and a friend of Elwood Mead. The three formed a kind of steering committee to direct the campaign. Elwood Mead himself came to the state in the summer of 1902 and gave his blessing.[32]

Mead had become a controversial figure. During the previous decade he had advocated the cession of public lands to the Western states to aid in the construction of irrigation projects. This proposal had been opposed by the proponents of federal reclamation under the leadership of George H. Maxwell. When this gentleman learned what was afoot in Montana, he wrote an open letter to United States Senator Paris Gibson in which he attacked Mead and the Wyoming System of state control and urged instead the delegation of the control of irrigation to the people of the hydrographic basins. This was an idea which Major John Wesley Powell had championed in his *Report on the Lands of the Arid Region of the United States*; it was similar to the Montana pattern. Maxwell bombarded the editors of the state with copies of this letter and other communications including copies of a pamphlet entitled, *Forewarned Is Forearmed*. To the concern of the Ray-Kinney-Fortier triumvirate these communications were widely reprinted and no doubt contributed to the defeat of the bill which the three had prepared.[33]

In the midst of this barrage, the legislature met.

[28] *Proceedings and Debates of the Constitutional Convention Held in the City of Helena, Montana*, 418, 901.

[29] *Journal* of the *Association of Engineering Societies*, 22: *Proceedings*, p. 17 (January, 1889), *Proceedings*, p. 33–34 (February, 1899); *Proceedings*, p. 37–41 (March, 1899); Montana, *House Journal*, 1899, p. 75, 95–96, 273–274, 306–08; Montana, *Senate Journal*, 1899, p. 5, 239, 241; Helena *Daily Independent*, February 24, 1899.

[30] Letter files of Director Samuel Fortier, August 18, 1902—March 18, 1903 located in the Agricultural Building, Montana State College, Bozeman, Montana, p. 108, 117, 131; Bozeman *Chronicle*, March 19, 1902.

[31] F. H. Ray, *Irrigation: Ought Montana to Aid It, If So, How?* (Helena, n.d.), p. 3, 79.

[32] Bozeman *Chronicle*, August 27, 1902.

[33] *Rocky Mountain Husbandman*, December 18, 25, 1902, January 22, 1903; *Montana Stockman and Farmer* (Helena), February 15, 1903; Great Falls *Tribune*, December 10, 1902; Helena *Daily Independent*, February 18, 22, 1903; Ray, *Irrigation*, 26–33; *Irrigation Age*, 18: 167–68 (April, 1903); R. O. Baird, "George Hebard Maxwell," *The Reclamation Era*, 36: 68 (April, 1950).

The bill was introduced by Representative John N. Tolman, a prominent stockman from Carbon County near the Wyoming border. He and his neighbors were vexed by endless litigation over rights to the water of the Clark Fork and they sought relief. Living near Wyoming, Tolman was familiar with the Wyoming System and admired it.[34]

The committee on Irrigation and Water Rights to which the measure was referred held an open meeting in Helena to sample the reaction of the public to it. Most of the opinions expressed there were hostile. Anton M. Holter, a prominent Helena merchant, spoke against the bill as did former United States Senator Thomas H. Carter and W. M. Wooldridge, an agent of the Great Northern Railroad. The latter read a resolution from some forty farmers in the Gallatin Valley protesting "against the passage of the proposed irrigation code known as the Ray bill." Due partly to E. C. Kinney's connection with the New York-directed Manhattan Malting Company, sentiment in this valley was decidedly hostile. Commenting on this opposition in a letter to Ray, Fortier declared, "You may write . . . on the tombstone of the bill, 'Killed by residents of Bozeman and vicinity' ". The committee reported the bill back to the House with the recommendation that it be indefinitely postponed.[35]

Its supporters salvaged what they could from their efforts by amending a bill which F. H. Ray had prepared for the replacement of the State Arid Land Grant Commission by a Carey Land Act Board so that it would include the creation of the office of state engineer with duties restricted to Carey Act business and to stream measurement. This bill became law on March 7, 1903, and Governor Joseph K. Toole appointed John W. Wade as Montana's first state engineer.[36]

Director Fortier had never had much hope that the attempt to change the water-right laws would succeed in 1903; rather he thought of it as an educational campaign and looked forward to favorable action by the next legislature. This body "passed the buck" and created an Irrigation Code Commission "to prepare a Revised Irrigation Code adapted to the needs of Montana". To this commission Governor Toole appointed F. H. Ray, J. N. Tolman, A. W. Mahon, I. D. O'Donnell, E. O. Lewis, C. H. Campbell, and H. N. Blake. These men discussed the problem with State Engineer Wade and in the summer of 1906 recommended the adoption of a code which had been prepared by Morris Bien of the United States Reclamation Service. For some reason this proposal was stillborn for it was never presented to the legislature.[37]

One must admire the perseverance of the Montana engineering profession. For the next thirty years every state engineer urged the improvement of the state's water right regulations. With the regularity of the biennia, they recommended change. Listen to Archie Mahon in 1912:

> It is virtually an indiscriminate scramble for water-rights without regulation or even an intelligent idea of what they really require. The result is that the county records become littered with filings of unknown value or validity. . . . There is no regulation, no supervision and no protection to any one. Our present recording system is farcical. . . . A land system which would accept a score of filings for the same quarter section of land and then leave the settlers to fight for its possession in the courts, would not be held in high esteem. A water-right law which places no restrictions on the claims to a stream is just as illogical and as fraught with needless abuses. . . . A radical change in our present water-right laws, placing the stream flow under the supervision and control of the state seems necessary to meet the changing conditions of our commonwealth. . . . I, therefore, recommend: That our present water-right laws be changed to embody a system of records and regulation in harmony with the laws of our neighboring states, where the change has been so satisfactory.[38]

Several years later Mahon helped Representative Frank T. Kelsey of Custer County write a water-right bill which the latter introduced

[34] Montana, *House Journal*, 1903, p. 66; Montana *Daily Record* (Helena), February 10, 1903; Helena *Daily Independent*, February 10, 1903; *Progressive Men of the State of Montana*, 1273. A copy of the bill is reproduced in Ray, *Irrigation*, 38–79.

[35] Letter files of Director Samuel Fortier, August 18, 1902–March 18, 1903, p. 341–47, 355–56, 362, 397; Bozeman *Chronicle*, February 4, 18, 1903; Montana *Daily Record*, February 10, 1903; Helena *Daily Independent*, February 10, 1903; Montana, *House Journal*, 1903, 228–29.

[36] Montana, *House Journal*, 1903, p. 65, 305; Montana, *Session Laws, 1903*, p. 211–16; Missoula *Democrat*, March 12, 1903; Ray, *Irrigation*, 79–96.

[37] *Report to Hon. Jos. K. Toole, Governor of Montana by the Irrigation Code Commission, July, 1906* (Helena, 1906), 1–31; Montana, *Session Laws, 1905*, p. 184; Montana State Engineer, *Second Biennial Report, 1905–1906*, p. 49–76.

[38] Montana State Engineer, *Fifth Biennial Report, 1911–1912*, p. 8–10.

into the 15th Legislative Assembly on January 21, 1917. Kelsey was a fellow engineer who had spent 12 years in the eastern part of the state as a surveyor and his bill was also a facsimile of the Wyoming Code. Like its predecessors, it did not survive an adverse committee report.[39]

The next attempt to introduce the Wyoming Code was prompted by the dry seasons which harassed the state from 1917 to 1921. Again it was an engineer who took the initiative. He was Professor H. E. Murdock, head of the Agricultural Engineering Department of Montana State College. Learning that an irrigators' institute had helped the people of the state of Washington to improve their water right, he interested a number of engineers and ranchers in organizing a similar institute for Montana. From its organization in January, 1920, to its demise nine years later, the principal objective of the Montana Irrigation and Drainage Institute was the adoption of a better water code. Its first legislative committee copied the Wyoming Code and had it introduced into the 1921 session of the legislature as House Bill No. 55. Similar to the previous bills, it met a similar fate. The House adopted a report of its Committee on Irrigation and Water Rights, "That H. B. No. 55 do not pass".[40]

Because the opponents of this bill attacked its method of adjudication by an administrative board and its hierarchy of tax-supported officials, the next legislative committee proposed a law patterned after the Washington Code which provided for the Oregon method of joint determination by the state engineer and the courts. A bill incorporating this proposal was introduced into the 1923 legislature. When it was killed by an adverse committee report, the members of the institute voted to resubmit the measure to the 1925 legislature, where it received the same treatment. The Wyoming Code was like a cat with nine lives.[41]

In 1927 the engineers returned to an earlier attack upon the problem. Representative B. C. Lillis, a Billings engineer who had served as president of the institute, introduced a proposal to create an irrigation and water right code committee, but the legislature rejected it.[42] The state engineer, however, still thought that "a new water right code, adopting the features found satisfactory in the modern codes of other irrigation states would seem advisable".[43]

The drought of the early 1930's stimulated one more attempt at water-right reformation. In 1931 Representative Lillis, as chairman of the Committee on Irrigation and Water Rights, introduced a bill to create a water-right code commission comparable to the one established in 1905. This bill passed and the commission which the governor appointed worked in cooperation with the irrigation committee of the Montana Chamber of Commerce, then known as Montanans, Inc. It drew up one more bill to bring the state's water-right laws into harmony with those of its sister states, but because of the worsening drought and waning income it was never introduced.[44]

With a tone of resignation, State Engineer J. S. James wrote in 1936: "The question of water-right laws is most complex. Not only that, but the provisions and workings of this law most vitally affect people of the state. It is felt, therefore, that no specific legislation should be recommended by this office at this time." Even the state engineer appeared resigned to local administration of Montana's water rights.[45]

[39] Montana, *House Journal*, 1917, p. lviii, 459, 491, 500, 595; Montana, 15th Legislative Assembly, House Bill No. 435 (Ms. in the archives of the Secretary of State, State Capitol, Helena, Montana); Interview with C. S. Heidel, Helena, Montana, June 22, 1950; Stout, *History of Montana*, 3: 1343.

[40] Montana, *House Journal*, 1921, p. xii, 123, 186, 543; Montana, 17th Legislative Assembly, House Bill No. 55 (Ms. in archives of the Secretary of State, State Capitol, Helena); *Proceedings of the First and Second Annual Meetings of the Montana Irrigation and Drainage Institute* (Bozeman, n.d.), 6–7, 10–12, 96–102; *Proceedings of the Seventh Annual Convention . . .*, 15, 17; interview with H. E. Murdock, Bozeman, July 27, 1948.

[41] Montana, *House Journal*, 1923, p. 333, 337, 399–400; 1925, p. xlv, 224, 374; Montana, 18th Legislative Assembly, House Bill No. 300 (Ms. in archives of the Secretary of State, State Capitol, Helena); 19th Legislative Assembly, House Bill No. 268 (Ms. in archives of the Secretary of State, Helena); *Proceedings of the Fifth Annual Meeting of the Montana Irrigation and Drainage Institute*, 72–82; *Proceedings of the Seventh Annual Convention . . .*, 9–10; Montana *Record-Herald* (Helena), February 6, 1925.

[42] Montana, *House Journal*, 1927, p. xlix, 260, 344.

[43] Montana State Engineer, Thirteenth Biennial Report (typewritten), 1927–1928, p. 9.

[44] Montana, *House Journal, 1931*, p. 207, 413, 517; *Session Laws, 1931*, p. 136–37; State Engineer, Fifteenth Biennial Report (typewritten), 1931–1932, p. 5–8; J. S. James to R. G. Dunbar, July 19, 1950.

[45] Montana State Engineer, Seventeenth Biennial Report (typewritten), 1935–1936, p. 3.

Why did these efforts to adopt a centralized system of water-right control fail?

In the first place, there were at least three groups who actively opposed it. (1) The farmers of the older settlements in the mountain valleys where water-rights had been adjudicated by the courts feared that a state bureaucracy would deprive them of their water-rights—a fear similar to that which their children have of a Missouri Valley Authority. Most were satisfied with local administration and felt that the proposed water administrative officers were unnecessary and expensive. The Gallatin Valley ranchmen expressed this point of view when in 1903 they declared that the Ray bill would "be of no benefit whatever to the farmers of Gallatin county, but . . . is designed and prepared for the sole and exclusive benefit of a few men who by reason of their profession as civil engineers, will alone be eligible to the numerous offices to be created by said law." (2) The ranchers of the plains area of Montana opposed the Wyoming System either because irrigation was not needed as much there as in the mountain valleys or because the streams were under-appropriated. (3) Opposition also came from lawyers. Although some lawyers like Thomas C. Marshall of Missoula, Frank W. Mettler of Helena, and Edwin K. Cheadle of Lewistown supported this movement, most of the bar favored the system which they had played such an important part in creating. They were opposed to the adjudication of property rights in water by an administrative board and believed that the Wyoming System was unconstitutional.[46]

Nevertheless, it seems to me that the basic reason for the failure of Montanans to reform their water-right laws is favorable climate. The state receives more rainfall and suffers less evaporation than the other Rocky Mountain states. Its principal rivers, the Missouri, the Yellowstone, and the Clark Fork of the Columbia never lack water. Its northern and eastern half is not part of the arid mountain West but a part of the semi-arid Great Plains.[47] In this region the irrigation institutions created in Colorado and Wyoming have had a checkered career. Only Nebraska has adopted the Wyoming System. In 1905 both of the neighboring Dakotas adopted the Bien version of the Wyoming Code, but there was relatively little irrigation in these two states. As in the plains section of Montana even when farmers built ditches they frequently used them only in dry years. Plains civilization was based instead upon dry-farming techniques. Consequently, the determination and administrative features of the Bien Code were either not used or repealed. Nor did Montanans make the mistake of accepting institutions made for an arid commonwealth; they remained loyal to institutions which they felt were suited to their needs.

On the other hand, the Dakotas adopted Wyoming's centralized registration system as did Kansas, Oklahoma, and the prairie provinces of Canada, demonstrating that this aspect of water-right administration was as applicable to the plains as it was to the mountain valleys. The Montana engineers knew its value and they did not give up the fight. Rather they altered their strategy, executed a flanking movement, and presented a program that was as brilliant as it was original. In 1939, two engineers, Fred E.

[46] Interviews with O. W. Monson, Bozeman, August 17, 1948, and with C. S. Heidel, Helena, June 22, 1950; J. S. James to R. G. Dunbar, July 19, 1950; B. C. Lillis to R. G. Dunbar, December 1, 1952; *Proceedings of the Third Annual Meeting of the Montana Irrigation and Drainage Institute*, 83; *Proceedings of the Fourth Annual Meeting of the Montana Irrigation and Drainage Institute*, 164–166; *Proceedings of the Seventh Annual Convention of the Montana Irrigation and Drainage Institute* 10; *Rocky Mountain Husbandman*, January 1, 8, 15, 29, 1903, February 5, 12, 1903; Bozeman *Chronicle*, February 10, 1903; Dillon *Examiner*, March 1, 1899; *Proceedings of the Montana Bar Association from January 13, 1903 to February 3, 1914* (Helena, n.d.), 141–42.

[47] *Proceedings of the Fourth Annual Meeting of the Montana Irrigation and Drainage Institute*, 163–64. C. E. Atwood pointed out on December 16, 1922, "The Wyoming and all the codes in the southern states are drawn up to fit a condition where it is absolutely arid. In the State of Montana we have years when we don't need irrigation. We also have times when one certain section of the State will have sufficient rainfall where only hay and crops of that nature need to be irrigated. Under those conditions the necessity for distributing water out of the streams would not be necessary. The present code makes it imperative to put on the State payroll five district superintendents at $4,000 a year and I doubt if that is necessary in the State of Montana as a fixed proposition. It might be necessary at times to have them or it might be at some time in the future necessary to put them on all the time but it isn't at present." See also Ralph H. Brown, "Irrigation in a Dry-Farming Region: the Greenfields Division of the Sun River Project," *Geographical Review*, 24: 596–604 (October, 1934).

Buck, State Engineer, and O. W. Monson, head of the Department of Agricultural Engineering at Montana State College, submitted to the Works Project Administration a proposal for a state-wide survey, recordation, and mapping of Montana's water resources. The project was approved, the state contributing $41,930 of the $218,125 initial outlay, and work began in February, 1940.[48]

The Montana Water Resources Survey is now 13 years old. Essentially a program of historical research, its workers investigate the origins of water-rights, dates of filing and construction, extent of appropriations, and present water uses. Too often the historical records in the county courthouses are lacking and the investigators must resort to interviews with the "old-timers". The records when gathered are assembled in the State Engineer's office where records and maps of the surveys are prepared and published county by county. To date these records have been published for 14 counties. When they are completed for the 56 counties, Montanans will have a unique record of their water-rights in a central office in Helena. Then it may be more obvious that some kind of centralized administrative system is needed to keep up-to-date the records assembled by the Water Resources Survey. The engineers may yet win their battle to provide Montana with a system of water-right records and regulations in harmony with those of neighboring states and provinces.

[48] Montana State Engineer, *Water Resources Survey, Big Horn County, Montana* (Helena, 1947), Pt. 1: 4.

LABOR MANAGEMENT PROBLEMS ON GEORGIA RICE PLANTATIONS, 1840–1860

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As a prelude to a detailed analysis of the subject, definitions of the economic practices, institutions, areas, and the period covered by the topic are appropriate.[1] Certain phases of the operation of 25,000 to 30,000 acres of tide-flow rice plantations in Georgia in the two decades before the Civil War will be examined. This acreage was distributed not too unevenly along the banks and on the islands of all five of the larger rivers emptying into the Atlantic Ocean along the Georgia coast. Some 6500 of these acres were on the Georgia shore and on the islands of the Savannah River. The total for the Ogeechee River area, lying nearby to the south, was about the same. Rice lands cultivated along the St. Mary's River, at the Florida boundary, possibly were somewhat greater in extent. The total comparable suitable lands along the banks and in the estuary of the remaining rivers, the Altamaha and the Satilla, was somewhat less, probably around 5000 acres each. In addition, it might be noted that more than 10,000 acres, located on the Carolina shore of the Savannah River, were also planted to tide-flow rice. A plausible argument can be made for considering them as a part of the Georgia rice-growing area too.[2]

The comparatively limited acreage devoted to rice culture along the Georgia coast resulted from the unusual soil and water requirements of the industry. Lands had to be located above the salt-water-line on the banks or on the islands of fresh-water streams, but where the fresh-water level was definitely raised by each high tide at the mouth of the stream. The zone where these conditions occurred was seldom more than eight to ten miles wide. Likewise, an unusual combination of medium

[1] This paper was presented at a joint meeting of the American Historical Association and the Agricultural History Society held at Chicago, Illinois, on December 30, 1953.

[2] Figures on tide flow rice acreage are based on a lengthy memo dated 1860 in Louis Manigault MSS, Southern Historical Collection (hereafter referred to as SHC), University of North Carolina Library; on quotations from the 1840 and 1860 census by Robert F. W. Allston in *De Bow's Review*, 1: 332 (April, 1846); and C. Mildred Thompson, *Reconstruction in Georgia, Economic, Social, and Political, 1865–1872* (New York, 1915), 304. Census returns listed crops in total pounds. Thus, by estimating 45 pounds per bushel and 45 bushels of rough rice per acre, it was possible to arrive at the probable acreage devoted to rice culture. See Albert V. House, *Planter Management and Capitalism in Ante-Bellum Georgia* (New York, 1954), 22–23, for further discussion of this problem.

to heavy topsoil and a substantial clay subsoil was necessary for the best results.

In the period under examination rice production in Georgia jumped from 13,000,000 pounds in 1840 to 52,000,000 in 1859. The yield for the earlier year was equal to 20 per cent of the South Carolina crop and that for 1859 was 45 per cent of the volume grown in the Palmetto state. Both figures reveal that Georgia's crop in those years ranked second in the United States. The decade of the 1850's especially saw the peak of production of Georgia rice, both in total crop and in bushels per acre, with the latter averaging as high as 50 in the year 1855.[3]

Georgia had its share of semi-marginal farmers or small-time planters who cultivated a few acres of rice, cotton, and corn with a labor force of less than 20 hands. But this study is concerned largely with operations on plantations ranging from 250 to 600 acres, with the median size in the neighborhood of 400 acres devoted to the tide-flow culture of rice. Highlands, hammock lands planted to provisions crops, woodlands, and the areas reserved for barns, slave cabins, and the living quarters of the owner quite often doubled the total acreage of the plantation. True, there were some plantations reported with as many as 1000 or 1200 acres of rice lands, but these frequently were divided up into two to four "plantations" of 300 to 400 acres each, and operated as separate units.[4]

Slave populations on these rice lands varied both in totals and in the ratio of hands to cultivated acreage. It was generally considered that one prime field hand was required for every seven acres planted. This meant that about 15 would be adequate for 100 acres and around 60 for the median size plantation of 400 acres. However, it should be recalled that sickness, pregnancy, youth, and old age usually prevented a planter from "fielding" much more than 50 per cent of his total slave population for heavy labor. Thus, the total number of slaves of all ages, capacities, and conditions on plantations with 400 acres devoted to rice would probably range between 110 and 130. Any planter who also had substantial highlands for provisions crops might find it desirable to have a few more workers available.[5]

In the period under examination, rice Negroes cost from $300 to $500. Cleared rice lands were valued at $80 an acre and uncleared swamps at $40 an acre. Thus, the capital investment in land and slaves was considerable. If to these figures the cost of milling machinery, barns, and living quarters be added, as well as the value of subsidiary acres not devoted to rice, it becomes obvious that the total cash or credit required to become a rice planter in Georgia would be upwards of $100,000.[6] A labor force of over 100, specialized production, dependence on prices of both supplies purchased and crops shipped out, reliance on middlemen for extensive services, and finally the need of a continuing flow of operating credit, all show that rice plantations in these years were a species of capitalistic enterprise.

In terms of their economic characteristics, tide-flow rice plantations had little in common with "His Majesty's Plantations" of the 17th and 18th centuries. Likewise, as economic institutions they should not be confused with the medieval manors of the 10th to the 14th centuries. Rice plantations in the Carolinas and Georgia had no guaranteed markets for their crops. With a gambler's prayer they sent the fruits of their agricultural production into a competitive market. Their goal was private profit, not national or local self-sufficiency. The fact that the field labor of medieval manors, mercantilist plantations, and capitalistic rice farms was tied to the land or owned by the planters is not a highly significant *economic* factor. True, fiefholders, operators, and owners of these types of agricultural production were drawn from the military, social, and political aristocracies of their eras, but this item also has little or no *economic* importance.

In recent years the term "planter capitalism" has been coined to describe the economic nature of plantation economy in southern United States in

[3] *Ibid.*, especially in Allston and Thompson.

[4] These statements are based on the memo in the Louis Manigault MSS listed in Note 2 above; the J. H. Couper MSS, SHC, University of North Carolina Library; and on knowledge acquired by the writer during the course of a personal inspection of abandoned rice plantations in the Altamaha River area in 1941.

[5] The ratio of one prime hand to every seven acres of rice land was recorded in Charles Manigault's Diary in 1844, Manigault MSS, SHC, University of North Carolina Library. This was confirmed by the records of numerous other rice plantations in Georgia.

[6] Slave and rice land prices are a synthesis of notations on the subject found in several manuscript sources including J. H. Couper MSS, SHC; "Elizafield Journal of Hugh Fraser Grant," in House, *Planter Management*, 254, 275; and most especially memos of Charles Manigault dated 1844 and January 1, 1845, in MSS Diary, Louis Manigault MSS, SHC.

the 19th century.[7] This is a happy phrase which facilitates analysis of the economic realities of these enterprises and also makes possible comparison with other forms of free enterprise activity such as commercial or industrial capitalism. Since the operations of these types are well known, it is possible to discuss the topic in the vocabulary of 20th century American industrial production. In fact, it may be claimed that labor management problems on Georgia rice plantations in the years 1840–1860 generally did not differ greatly from those which today confront the owner-manager of a small battery manufacturing establishment with 100 or so employees. Labor management in both situations may be defined as "the arrangement of operations and working conditions so as to provide for the most efficient and economical use of the labor force."

It is obvious that the owner-operator of a Georgia rice plantation did not have to worry about the possibility of a strike by his laborers, or the necessity to bargain collectively with their union, or the threat of their disappearance to work for high wages at a hydrogen bomb defense plant located a few miles up the Savannah River. But he was required to perform all of the functions which have been delineated as the responsibility of management in the handling of labor today. These included selection (acquisition), training and classification, supervision through channels of authority and responsibility, planning of work schedules and the flow of production supplies and materials, discipline and discharge of misfits, and finally, morale, health, old age security, and general working and living conditions. Although the planter may not have had the benefit of extensive charts or tables of organization to assist him with his problems and may have been relying largely on common sense, experience, and the lessons learned from neighbors and predecessors, yet he soon came to learn that those planters who turned in a superior performance in these areas of employee relations and management increased the chances of the continuing success of their enterprise. Those who fell down badly in several of these categories had taken a long step towards foreclosure by the factor, and failure. It should be obvious that opportunities to sit on broad verandas sipping mint juleps would be infrequent for the younger planters. Only in their declining years, after they had trained a collection of sons, sons-in-law, and nephews to take over the reins of management, would it be possible for older planters to spend many hours in such pleasant recreation and contemplation.

It was not a simple matter to acquire an adequate number of prime field hands for labor on rice plantations. One of the most widely accepted maxims of the rice coast was that slaves who had been raised in the environment of cotton, tobacco, or even most sugar plantations, could not adjust easily to living and working conditions on a rice plantation. This was doubly true of those who had been softened by service as "town house slaves" in urban areas. Life on rice plantations was quite isolated for both blacks and whites. In the summer, the owner and his family never slept on the plantation. They moved to summer quarters, located far enough from the river swamps so as to be free from the threat of malaria. This left only the overseer "on the place" after dark, and even he was not always at hand. Hence, the slave population was required to develop a species of group self-discipline under the leadership of their drivers, who acted as sub-foremen by day and keepers of group discipline by night. Thus, rice Negroes were not happy to have their ranks disturbed by the addition of new members who did not readily understand "the customs of the service."[8]

Diet also was a problem for non-rice slaves who found themselves on rice plantations. Rice, the basic crop of the plantation, often was also the chief item in the food of the slaves. This food is not a staple element in the American diet today, but most of the rice Negroes not only accepted this fare, but preferred it and became disturbed when it was not available.[9] It is not difficult to understand that cotton or tobacco Negroes might find considerable difficulty in adjusting to such food.

Rice plantation labor operated under the "task system."[10] Those laborers who did not have a

[7] Louis Hacker, *The Triumph of American Capitalism* (New York, 1940), 280–321, contains an excellent discussion of planter capitalism. See also Francis B. Simkins, *The South, Old and New, A History 1820–1947* (New York, 1947), 33–54.

[8] House, *Planter Management*, 10, 102, 105–06, 110; and Ulrich B. Phillips, *American Negro Slavery* (New York, 1918), 255.

[9] Phillips, *ibid.*, 255, and Albert V. House, Jr., "Deterioration of a Georgia Rice Plantation During Four Years of Civil War," in *Journal of Southern History*, 9: 109 (February, 1943).

[10] Ulrich B. Phillips, *Plantation and Frontier, 1649–1843*, vols. 1 and 2, *A Documentary History of American Industrial Society;* John R. Commons, ed. (10 vols., Cleveland, 1910–11), 1: 117, quoting "Rules on Rice

specialist's rating and duties were taken to the scene of their day's labor by a driver who assigned tasks to each hand. When the completed task was inspected by the driver, the worker was through for the day. Laborers from other types of plantations who had been closely supervised and pushed under the gang system seemed lost without such control and often were poor operatives under the comparative freedom of the task system.

These differences between rice and non-rice Negroes meant that new hands usually were acquired from other rice plantations. Some were being sold off because they were misfits or trouble-makers. Others showed up in the labor market, when estates were broken up in the process of settlement. Still others became available when the topsoil of some rice lands lost their productive capacity due to excessive oxidation, overplanting, or extensive salt water damage. The medium and larger rice plantations were able to provide a goodly proportion of their new workers through natural increase. A sampling of Georgia rice plantation records reveals an average of five births per year for every 100 of total slave population.[11] These new arrivals did not all survive until the day when they were ready for field duty, yet their appearance provided a partial solution to the problem of "acquisition and selection" of a labor force.

Training and classification of the abilities and duties of the various members of the labor force was not made on the basis of a battery of aptitude and psychological tests. All training was designed to produce the maximum number of prime field hands for full duty in all tasks involved in the year-round routine of the plantation. Prime field hands (both men and women) were those who could accomplish the assigned task in a normal working day of nine or ten hours. Boys and girls aged ten to fourteen and some women were rated as one-quarter, one-half, or even three-quarters of a prime hand. It was sometimes possible to increase the number engaged in field work by classifying some as "hoes." This implied that although all were not capable of extremely heavy work such as excavation for ditches, canals, and banks, or for clearing new swamp-land, yet they could be expected to perform a full day's labor at the less arduous tasks.[12]

Nearly all hands were put to the test of field duty from the age of ten on. These lacking in skills or vigor were assigned to a variety of specialized jobs such as bird-minders to drive away the May-birds. Others were labeled as rat-catchers, some of whom showed such genius and perseverance that they caught as high as 4,500 in a season, at the rate of 30 to 40 per day.[13] They operated with the help of trained rat-curs who routed out and killed the rodents. Other specialists were assigned as watchmen in the yard and as guards for the cattle and other animals, both day and night.

The trunk-minders and mill operatives were very special specialists. Their duties called for some mechanical skill and a smattering of understanding of the principles of practical engineering. The trunk-minders were assigned special flat-boats to enable them to move rapidly over the extensive water system of the plantation. The mill-workers were considered so competent and reliable that on occasion overseers were forbidden by the owners to interfere with mill operations in any manner whatsoever.[14] Some plantations also were staffed with highly skilled carpenters, woodworkers, and mechanics of various types, who were the elite of the yard and house Negroes. Other slaves were, of course, assigned to household duty and personal service for the family. Among those so classified usually there was to be found both a midwife and a head nurse who presided over the hospital for Negroes.[15]

All of the labor force was kept busy at all times, with the assigned tasks designed to provide a maximum of efficiency and productivity. Pronounced rivalries existed between the house, yard, and field Negroes, and there was little shifting from one category to another. The overseer and the manager, agent, or owner continuously evaluated and reclassified the members of the labor force, as varying situations, abilities, and bodily vigor suggested. This continuing operation called for common sense, skilled observation, and good judgment.

Any productive process which uses the sweat and skill of considerable numbers of dependent laborers must provide for adequate supervision of operations, step by step. This is especially true of any system which relies heavily on human energy and only incidentally on machines. The culture of rice was of this type but it also was affected by the

Estate (1856) of P. C. Weston, South Carolina," as published in *De Bow's Review*, 21: 38–44 (January, 1857).

[11] "Elizafield Journal" in House, *Planter Management*, 252–60.

[12] *Ibid.*, 53.

[13] MSS Diary, Memo of C. Manigault dated 1844, Manigault MSS, SHC.

[14] Phillips, *Plantation and Frontier*, 1: 124.

[15] *Ibid.*, 119.

vagaries of mother nature in terms of temperature, floods, birds, and plant diseases. Tremendous damage could be visited upon the crop if the decisions as to planting, watering, or harvesting the rice were not made at the proper time or not promptly implemented when made. As one authority has said, "Every grower must in practice be his own rice doctor or have none at most times."[16] This resulted in each planter usually acting as his own superintendent of production. If, however, his continued presence on the plantation was not possible or probable, a manager or agent exercised general supervisory control and made the fundamental decisions. But even such personnel functioned within the framework of meticulous instructions and standard operating procedures provided by the owner.

The general operational regulations for rice plantations were, on occasion, set forth even in the contract between the planter and his overseer. These established the limited nature of that worthy's authority, practices, and responsibilities. Hence most overseers must be considered as executive assistants not as deputy managers. They, in turn, passed on instructions to Negro drivers, who saw to it that the orders of the overseer were carried out. Good drivers were hard to come by. These subforemen or first sergeants had to be able to manage their fellow slaves, largely through their natural powers of leadership. Their authority was practically non-existent, but much was expected of them. They supervised the work of from 25 to 40 field hands in all the varied tasks of the plantation. Most rice plantations in Georgia had at least two such drivers and the larger establishments still more.

A considerable volume of literature is already in print pointing out that the planter's lady was the supervisor of the household slaves.[17] She also was expected to administer medicines to the sick among the labor force and see to it that the Negro hospital was operated effectively. Yard specialists usually worked without direct, contact supervision, but were responsible to the overseer generally.

All students of economic specialization are aware that a low unit cost of production can best be achieved when labor and machinery can be employed at a maximum consistent with the danger of undue deterioration. On rice plantations this meant that the labor force must be used for the production of rice primarily and only secondarily to grow food and provisions. The overhead investment represented by the cleared rice fields, the extensive water system, and both the original and continuing cost of a slave labor force all dictated this practice. True, in some years the cost of food was so high and the price of rice so low that, in retrospect, the planter might wish that he had raised more provisions for his labor force than was customary. Each planter knew, however, that if he adopted a policy of devoting an undue proportion of his land and labor to provisions for his force, he would be sacrificing the advantages of economic specialization and making little progress on the problem of reduction of unit costs.

The availability of appropriate lands for production of provisions was another factor in the picture. Only those planters who possessed highlands, or hammock lands, could raise provisions profitably since rice lands with their fairly heavy top-soil were not well suited to the growing of roots and other clean culture crops, such as corn. Georgia rice planters in some years planted as high as one-quarter of their total cultivated areas to provisions for their hands. They thus raised most of the slips, pease, and roots consumed by the slave population.[18] In years when rice was priced very low on the market, they may have fed more homegrown rice than usual to the Negroes. Whatever the policy in any given year the planting, cultivation, and harvesting of provisions were never allowed to interfere with the requirements for the cultivation of the primary crop: RICE.

The task system was the yardstick designed to produce effective performance and also serve as a convenient standard for the measurement and estimate of the labor requirements on various projects. The usual task was one-quarter of an acre, a square 105 feet on a side. This standard was expected regardless of whether the work was trenching, hoeing, cutting the rice crop, or tying and carrying off the bound sheaves to the flatboats for transportation to the yard. The limits of this task were seldom altered either up or down, except under the stress of very unusual conditions. Six hundred sheaves or 12 bushels of rough rice per day was the usual standard for threshing with the flail stick. Six hundred cubic feet per day were required when excavating for ditches and canals. This figure was reduced somewhat if the project involved the clear-

[16] E. B. Copeland, *Rice* (London, 1924), 54.

[17] Phillips, *American Negro Slavery*, 323.

[18] House, *Planter Management*, 48; Crops Record Book, 1818–30, and Summary of Crops at Hopeton, 1827–41, J. H. Couper MSS, SHC.

ing of new land for cultivation.[19] Such labor was very heavy and, contrary to the practice of some sugar plantations in Louisiana, was always performed by Negro labor.[20]

The normal labor force was often supplemented by hired labor from neighboring plantations when new land was to be cleared. Prices for such labor varied from $18 per month for short periods to $70–$100 per year. Occasionally, planters hired out some of their slaves for labor on local internal improvements, such as the Brunswick-Altamaha canal in Georgia.[21] One planter in the Savannah River area contracted to refrain from planting for one year and use his entire labor force to construct a floodwall or breakwater to protect the rice lands of the region. His price for this project was $20,000, which was paid for cooperatively by the owners of adjacent plantations.[22]

Strictly speaking, such peripheral subjects as morale, health, old age security, and procedures for disciplining the slaves probably should be considered as problems of the slavery system and not as slave labor management questions. This differentiation is based on the belief that the legal rights inherent in the ownership of slaves and the myriad procedures for controlling such property are separate and distinct from the problems of managing such labor to provide for maximum economic productivity.[23] Yet today such "fringe benefits" and security guarantees have become a part of the labor bargain as the result of government intervention, dynamic labor leadership, and paternalistic capitalism. Increased productivity per man has usually been achieved by a labor force in which satisfactory solutions have been found in those areas of human relations. Georgia rice planters generally recognized the economic desirability of providing for the welfare and control of their slaves. Programs to produce such contented and healthy laborers were designed with great care. Many planters thought them so significant that they included detailed descriptions of such practices in their contracts with overseers.[24]

In addition to limited hospital care and home medication, most planters had contracts with local doctors which provided for a species of "group health medical care" for the entire slave population at the rate of $1.50 per head per year. Pregnant women and lying-in mothers were relieved from most field labor duties. Some planters worked their laborers for only five and one-half days a week and used the Saturday afternoon hours as a penalty period during which slothful workers had to work out their demerits. All provided for no Sunday work except during harvesting and other emergencies. During the six to eight weeks harvesting period, everyone on the plantation was busy from dawn to dusk, if the condition of the crop demanded it.[25] Extensive holidays after the completion of harvesting and also at Christmas were the general practice. Extra rations, sometimes in the form of semi-fancy goods appeared for such celebrations. Many planters allowed their laborers to plant small garden patches which they worked after the completion of their daily tasks. Slaves were often given the opportunity to earn a little cash money in their spare time by hand manufacturing such wood products as shingles which they sold to the planters. Old age security was furnished by keeping over-age slaves busy with a variety of simple duties as semi-pensioners.[26]

Each plantation had a stringent code for the disciplining of slaves who malingered, were trouble makers among their own people, or generally failed to perform as expected. Punishment varied from confinement in the jail of the nearest town to as much as 50 lashes for serious transgressions. Those failing to respond to continued efforts at rehabilitation were sold off, if possible. The basic principles underlying these slave regulations were summarized effectively by a Carolina planter as follows:

[19] Slave List and Plantation Notes, Mackey-Stiles MSS; and Slave Record Book, C. Manigault MSS, both in SHC.

[20] J. Carlyle Sitterson, *Sugar Country* (Lexington, 1953), 66.

[21] Slave List and Plantation Notes, dated March 4, 1845, Mackey-Stiles MSS, SHC. See also "Elizafield Journal" in House, *Planter Management*, 289.

[22] Louis Manigault to C. Manigault, February 25, 1854, Louis Manigault MSS, Duke University Library.

[23] This thesis is described in some detail by Alfred H. Stone, "Some Problems in Southern Economic History," *American Historical Review*, 13: 779–97 (July, 1909).

[24] Phillips, *Plantation and Frontier*, 1: 109–30.

[25] This was also the rule along the Carolina rice coast as shown by *Rice Planter and Sportsman, The Recollections of J. Motte Alston, 1821–1909*, Arney R. Childs, ed. (Columbia, 1953), 47. This source also indicates that the holiday which followed the completion of harvesting was so strenuous that "hardly a corporal's guard was fit for duty for some days thereafter."

[26] This paragraph is a synthesis of items found in a variety of sources including: MSS Diary, Memo by C. Manigault, dated April 15, 1845, SHC; "Elizafield Journal," in House, *Planter Management, passim;* and Phillips, *American Negro Slavery*, 263–66.

1. Never threaten a negro.
2. Never show passion before them.
3. Always keep your word to your slaves.
4. Have no favorite.
5. Do not be betrayed by good behavior to relax your discipline.
6. The way to keep him honest, is therefore not to trust him.[37]

In summary, it may be said that the labor management problems on Georgia rice plantations (1840–1860) were not simple. Neither were they exactly like those of cotton, tobacco, and sugar planters. They correspond in many ways to those facing the owner-managers of small industrial enterprises today. These problems were attacked with intelligence, perseverance, and courage. The fact that the legal basis of their labor system was eventually wiped out by war and constitutional amendment should not lead us into the fallacy of thinking that these planters were failures as economic entrepreneurs and managers. We should not allow our antipathy towards the slavery system to pervert our evaluation of Negro labor, whether free or slave. The obvious imbalance of the total economy of the southern plantation area was probably, until recent times, the greatest weakness of that society. Within the limitations of their resources and economic status, southern planters, especially Georgia rice planters, turned in a good performance in labor management well over a century ago.

[37] *Southern Agriculturist*, 15: 533 (October, 1842).

PLANTS, PROBLEMS, AND PERSONALITIES: THE GENESIS OF THE BUREAU OF PLANT INDUSTRY

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The Bureau of Plant Industry had its genesis many years ago in the agricultural needs of the country.[1] An attempt will be made here to review briefly the problems and personalities operating through the years which made the creation of the bureau inevitable. Agricultural problems have existed in all countries and in all ages and the United States has not been an exception to this rule. The extent to which such problems have been solved has largely determined the stability and permanence of the country involved. In its half century of existence the Bureau of Plant Industry has abundantly justified the faith of its founders by contributing substantially to the solutions of many of these problems and thereby to the agricultural progress of this country.

The Bureau of Plant Industry as such commenced operations on July 1, 1901, as one of the tetrad of bureaus, including Forestry, Chemistry, and Soils, established under the authority of the appropriation act of March, 1901, later confirmed by an act of Congress on June 3, 1902.[2] The bureau was formed by the consolidation of five divisions which had been in operation for varying lengths of time, namely: Vegetable Physiology and Pathology, Gardens and Grounds, Pomology, Agrostology, and Botany. During the first year of the Bureau, Seed and Plant Introduction, Congressional Seed Distribution, the experimental work with tea, and the management of the very re-

[1] This article is based on a talk given at the 50th anniversary seminar of the Bureau of Plant Industry, Soils, and Agricultural Engineering, October 24, 1951. In addition to the sources hereafter cited, the author has used data from F. W. Powell, *The Bureau of Plant Industry, Its History, Activities, and Organization* (Baltimore, 1927), and from unpublished documents given to him by B. T. Galloway. Although this account, because of space limitations, is confined to the story of the Bureau of Plant Industry, it is understood that during the period under review similar steps to establish agricultural research institutions were under way in the states. These activities, spurred on by the passage of the Hatch Act (1887) and the Adams Act (1906), culminated in the present agricultural colleges and experiment stations of the several states. The building of these institutions and their co-operative relationships is a story in itself. An authoritative account of this parallel development of state and federal agricultural research facilities will be found in A. C. True, *A History of Agricultural Experimentation and Research in the United States*, U. S. Department of Agriculture, *Miscellaneous Publications* 251 (July, 1937).

[2] U. S. *Statutes at Large*, 31: 922, 926; *ibid.*, 32: 303.

cently acquired Arlington farm were added by executive order.[3]

These several units may be considered individually in an attempt to point out their place in the general pattern, including pertinent comments on the men and women involved as leaders and staff members. The Division of Vegetable Physiology and Pathology will be discussed first, not because it was the oldest, but because through the genius of its leader, B. T. Galloway, it served as a catalyst, as it were, in the formation of the bureau. Galloway and his co-workers added prestige to the bureau through their effective attack on the many botanical problems, particularly in the then relatively new fields of plant pathology and plant physiology. Somewhat against the better judgment of George Vasey, then botanist and head of the division, this unit was initiated July 1, 1885, by F. Lampson Scribner, the first federal phytopathologist. It was called the Section of Mycology of the Division of Botany.

Scribner immediately plunged into a study of grape diseases. This was clearly the outstanding plant disease problem of the period, both here and abroad, due to the uncontrolled ravages of the two mildews, black rot, and other fungus induced diseases. His reports for 1886 and 1887 and other publications of the section testify to the success of his studies of these diseases and those of other crops which came to his attention.[4] His book *Fungus Diseases of the Grape and Other Plants*, published in 1890 in New York City, is the first American phytopathological text. In the fall of 1887 he secured an assistant, Beverly T. Galloway, or "B. T." as he was known to friends and associates. After a brief apprenticeship, B. T. found himself in charge when on July 1, 1888, Scribner left to become director of the Tennessee Agricultural Experiment Station. For half a century thereafter, Galloway was the leading figure in the succession of events that led to the organization and subsequent development of the bureau.

In the years immediately following, Galloway gathered about him the group of enthusiastic associates whose names are indelibly associated with the economic plant research activities of the time. There was Erwin F. Smith, whose first studies with peach yellows and other virus diseases are still classical. He later turned to the then unknown field of bacterial plant diseases and explored it so thoroughly and effectively that he stands today as the founder of that branch of phytopathology. Smith took time out to produce a vigorous polemic directed against his German opponent, Dr. Alfred Fischer who had sneered at the idea of bacterial plant diseases in general, and at upstart American workers in particular.

Citrus diseases and the new field of plant breeding engaged the attention of W. T. Swingle and H. J. Webber. Swingle began his career in the study of dates, citrus, and other subtropical fruits, studies that have continued almost to the present day. Webber moved on to a noted career in plant breeding outside of the department. M. B. Waite continued the basic investigations of his teacher, T. J. Burrill, the pioneer Illinois botanist and plant pathologist who first showed that bacteria can cause plant diseases. Waite, in turn, first demonstrated with his studies of pear blight that insects can act as agents in the transmission of plant diseases. His studies in control of pear blight were successful. He soon took up a general study of orchard diseases and became the leader of the fruit disease work in the bureau.

David Fairchild in his earlier years served as a plant pathologist, under B. T.'s direction, and experimented with control of fungi which caused fruit diseases, by spraying with fungicides. In the late nineties he definitely turned to his life work as a plant explorer. Plant physiology as a basis for studying disease resistance and the breeding of resistant varieties was brought into the picture by A. F. Woods. Later, this phase of the division's work was emphasized by W. A. Orton and others. Orton's work in the development of disease resistant strains of cotton and cowpeas set the pace in the development of this fundamental approach to disease control.

During this period, Mark Carleton joined the staff to study the problems of the cereal crops, particularly wheat. He began with the wheat rusts, but soon became immersed in the agronomic phases of the problem. With Galloway's close cooperation and detailed direction, he made his memorable trip to Russia for the durum and other wheat varieties which proved of vast benefit to the agriculture of the great plains area. P. H. Dorsett,

[3] James Wilson, Secretary of Agriculture, General Orders Nos. 37, 39, 40, 41, 1901. Historical File, Plant Industry Station, Beltsville, Maryland.

[4] F. L. Scribner, "Report of the Mycological Section," *Report of the Commissioner of Agriculture*, 1886, p. 95–138; F. L. Scribner, "Report of the Section of Vegetable Pathology," *ibid.*, 1887, p. 323–397.

a fellow Missourian, should not be overlooked. He spent his official career as B. T.'s assistant, whether that involved looking after the personally owned greenhouses at Garrett Park, shingling a roof at the Chico Plant Introduction Station in California, or carrying on years of plant exploration in China and Japan. Galloway himself participated in the scientific work of his unit, as his publications attest, until growing administrative duties took him away from it.

One phase of Galloway's activities that must not be overlooked was his active interest in the rights and privileges of the scientific worker. It had been customary in the department, and in fact in many parts of the scientific world, for the chief of a unit to publish as his own the work of his subordinates, and without credit, of course. Galloway objected firmly to such a policy and as soon as he found himself in an administrative position, saw to it that full credit was given for all published material.[5] C. V. Riley, Chief of Entomology, was appalled at such a *modus operandi*. When Galloway refused to alter his policy, Riley had him cited to the Commissioner of Agriculture on the grounds that such procedure cheapened the work and led to lack of confidence in it on the part of the public, which was not familiar with the names of the younger workers. A hearing was held and the new policy was specifically approved and it has been in effect since that time.

In the early days there were few women technical workers and it may be assumed that their presence was rather frowned on in general. Miss Effie Southworth was, however, long an able member of the group, and is known for her studies of the anthracnose and other fungus induced diseases. During these formative years the fungus herbarium was an integral part of the division, with one or two assistants assigned to its care and upbuilding. By 1895, a crisis was reached in the affairs of the herbarium, which Galloway, writing in later years, described as follows:

> The glamour of field service in phytopathology was irresistable so that our collections were beginning to languish and our mycological technique becoming rusty. To meet the situation we tried various expedients and made numerous experiments. It was the conviction of my colleagues that our only hope was to find a man, rich in experience, and so wedded to mycology that nothing could swerve him from the beaten path. The experiment was made, but the man failed us.[6]

In this emergency, Mrs. Flora W. Patterson was placed in charge of the fungus herbarium in 1896 as assistant pathologist, and for more than 28 years devoted herself unceasingly to building up the collections.

During the years preceding the formation of the bureau, Galloway and his associates had taken a leading part in the development of plant pathology in this country, particularly in the testing of fungicides following the discoveries of P. M. A. Millardet in France. They had initiated studies in plant breeding as a basis for producing disease resistant varieties of economic crop plants, had undertaken studies in plant physiology as related to plant diseases and plant nutrition, had taken part in various plant and seed introduction enterprises, had studied subtropical fruits at the Miami field station and in California, had co-operated with the infant soil division in all angles of tobacco culture, including fermentation studies of the harvested crop, and had worked in many other botanical and agricultural activities. This growing diversity of interests had been marked by changes in designation. The unit became the Section of Vegetable Pathology in 1888, and the Division of Vegetable Pathology in 1890 at the time of its separation from the Division of Botany.[7] In 1895 it became the Division of Vegetable Physiology and Pathology.[8] By 1900, Galloway with his division not only had a firm foundation in place, but also had gone a long way in building the superstructure of a Bureau of Plant Industry. We may leave it here temporarily for a glimpse of the other units involved.

The appointment of a botanist was authorized in the organic act of May 15, 1862, establishing the Department of Agriculture.[9] No steps were taken in this direction until the Division of Botany was established in 1868 to care for the herbarium material which had been collected by various government expeditions and had been in the custody of the Smithsonian Institution. The National Herbarium thus established became the chief concern of the successive heads of

[5] Personal communication from Galloway to the author.

[6] B. T. Galloway, "Flora W. Patterson," *Phytopathology*, 18: 877 (1928).

[7] U. S. *Statutes at Large*, 24: 495; *ibid.*, 26: 282–83.

[8] *Ibid.*, 28: 727–28.

[9] *Ibid.*, 12: 387.

the division, C. C. Parry, George Vasey, and F. V. Coville, until the enormously enlarged herbarium, one of the largest in the world, was turned back to the Smithsonian Institution in 1896. Coville continued as curator, and maintained effective control of the herbarium until his death. The publication, *Contributions from the U. S. National Herbarium*, was commenced during Vasey's regime and continued under Coville's management for some years after both it and the herbarium had been transferred.

In addition to long continuing taxonomic studies of vascular plants to meet definite agricultural needs, various other activities were taken up from time to time within this division. These included intensive studies of grasses and other forage plants, seed testing to insure clean viable seeds for farmers in general, research on the biology and control of weeds and poisonous plants, and investigations of native plant resources, particularly in the western half of the country. In general the division was concerned with "the application of technical knowledge of botany to the plant problems of agriculture." In 1897 Coville declared:

> the fact remains that a large proportion of the successful investigations in American agricultural botany were initiated in this division, some of them being carried to completion within it, others developing such importance as to have been deemed worthy of separation into distinct divisions.[10]

The oldest of the several divisions under discussion is the Experimental Gardens and Grounds which came into being with the department itself in 1862. William Saunders, a Scottish gardener trained in England, who had been in charge of the propagating garden at Sixth Street and Missouri Avenue, N. W., in Washington, was appointed superintendent, and carried on singlehandedly for nearly forty years. His activities involved the landscaping and care of the Agricultural Department Grounds, building and maintenance of greenhouses and a large conservatory for plant display, and the introduction, propagation, and distribution of enormous numbers of seeds, cuttings, and plants of fruits, ornamentals, forest trees, fiber, forage, and other economic plants such as coffee, tea, camphor, and in fact any plant that promised to be of value to the agriculture and horticulture of the country. He investigated the diseases and insects that attacked his plantings and had many other agricultural interests.

For some years his work and that of the Division of Statistics embraced the entire work of the department. His abilities and achievements deserve a high rating and he accomplished much for his adopted country. The introduction and establishment of the Bahia navel orange alone gives him a permanent niche in the hall of agricultural fame.

With Saunders working in many parts of the horticultural field, it is somewhat difficult to explain how a Division of Pomology independent of this indefatigable worker ever pushed its way into the Washington scene. However, such a unit was set up in 1884 to study pomological problems, which were apparently rather pressing at the time.[11] H. E. Van Deman initiated the work. In later years G. W. Brackett was the leader of the division which collected and distributed information regarding the American fruit industry, studied the quality and cultural needs of standard varieties, and introduced new and untried fruits from foreign countries.

J. Sterling Morton became Secretary of Agriculture in 1897 and was definitely not interested in establishing new divisions. The assistant secretary, Dr. Charles W. Dabney, had been placed in charge of the department's research work. Recognizing the need for expansion, he thought there might be a place in the department for a new division to take over and intensify the work with grasses and other forage crops. The situation was critical at the time because of the great agricultural developments under way in the semiarid western states. The Secretary listened without much interest to Dabney until the latter proposed naming the new unit the Division of Agrostology. He then acquiesced, saying that the word agrostology was so mystifying and altogether unusual that he believed he could stand for a division of that name. Accordingly, Agrostology was established in 1895 with Scribner, who had been recalled from Tennessee, as its first chief. The unit took over from the Division of Botany all work pertaining to the grasses and other forage plants and conducted a series of vigorous field studies in the Great Plains and Rocky Mountain areas. Taxonomic studies of the grasses were also continued. Dr. C. L. Shear was a member of this division for some years and is still remembered

[10] U. S. Department of Agriculture, *Yearbook*, 1897, p. 90.

[11] U. S. *Statutes at Large*, 22: 89, 91.

for his monograph on the genus *Bromus* and other agrostological studies. Throughout this time, however, he continued to be interested in the fungi which soon led him into the study of diseases of small fruits and of taxonomic mycology, fields in which he gained an international reputation.

When the bureau was founded, a small amount of money was available for the study of the possibility of establishing a tea-growing industry in this country.[13] Such an attempt had been tried earlier in South Carolina and the later experiment was a continuation under the supervision of a Dr. C. U. Shepard, who also devoted his own land and resources to the project. Tea growing was successful, but tea marketing as a profitable business was not, and the work soon became of historical interest only.

Congressional seed distribution, even at this time, was an old and painful subject. It had, perhaps necessarily, loomed large in the work of the department and its predecessors through the years, but no scientific results were expected or obtained. Further mention is therefore unnecessary except to point out that Secretary Wilson was known to be firmly opposed to such distribution and that he was very glad to wash his hands of the problem by turning it over in toto to Galloway. This he did in General Orders 40 and 41, under date of April 24, 1901, ordering that "all matters pertaining to the Congressional distribution of seed, including the control of the employees of the seed division shall be in charge of Mr. Beverly T. Galloway."

The department had been assigned various small tracts of land in the District of Columbia for experimental plantings, including the propagating garden at Sixth Street and Missouri Avenue, and the reservation where the department buildings now stand. None was ever satisfactory and the department grounds were finally turned over to Saunders for use as an arboretum and for ornamental plantings. The land need was finally met about 1900 by the assignment of 400 acres of the Lee estate, an area thereafter known as the Arlington experiment farm. The question of which divisions would use this land and to what extent, or whether another division would be set up to go on its free and unrestricted way with whatever agricultural problems its leaders might elect to undertake, was solved by Secretary Wilson, by General Order No. 39, to the effect that "The Arlington Experimental Farm is hereby placed under the supervision of Mr. Beverly T. Galloway."

Finally, the foreign plant and seed introduction work must be considered. It is the youngest of the several units here discussed, but clearly the oldest agricultural activity in this or any other country. Ignoring the mythical search for the golden apples of the Hesperides and the attempt of Columbus to obtain the spices and other plant products of the East by sailing west, we find even in the colonial period many attempts made by the government to introduce and cultivate new crops, particularly those not grown in England, such as sugar cane, indigo, and rice.

Benjamin Franklin, agent of the colony of Pennsylvania (1764–1775), sent home from England seeds and cuttings, an example followed after the Revolution by many naval and consular officers including Thomas Jefferson. Congress was interested to the extent of exempting foreign plants and seeds from customs duties for brief periods. The House of Representatives in 1830 requested the President to procure varieties of sugar cane and such other plants "as may best be adapted to the climate and soil of the United States."[13]

Substantial progress was not achieved until Henry L. Ellsworth as Commissioner of Patents in 1836 on his own initiative undertook to distribute seeds and plants of foreign origin to American farmers, using the franks of various Congressional friends. Hauled on the Congressional carpet for such conduct, he used this opportunity, as well as his report of 1837, to urge the creation of an agency to receive and distribute such materials and to encourage agriculture in others ways. His appeal was successful, and such an agency was set up in the Patent Office in 1839 with an appropriation of $1,000 to be expended for the purchase and distribution of seeds and plants and for the gathering of agricultural statistics.[14] As might be expected of an allotment of this size, it proved sufficient to care for the work for several years!

The search for new plants continued to have federal support. It was carried on by the Patent Office until 1862, and thereafter by the newly established Department of Agriculture. In fact,

[13] Nelson Klose, "Experiments in Tea Production in the United States," *Agricultural History*, 24: 156–61 (July, 1950).

[13] 2 Cong., 1 sess. *House Report*, 3: res. 3 (1830).

[14] U. S. *Statutes at Large*, 5: 353, 354.

the act creating the department required it to procure, propagate, and distribute cuttings and seeds of new and useful varieties. Saunders speedily took over this phase of the department's operation, but in due time he encountered strong competition from the Divisions of Botany, Vegetable Pathology, Pomology, and Agrostology.

David Fairchild, through his association with Barbour Lathrop, a wealthy plant enthusiast, became interested in foreign travel for the purpose of searching for useful new plants. He became an official plant explorer in the late nineties and finally organized and set up the work as a distinct unit. At the time of the founding of the bureau, however, he had been transferred to the position of "permanent plant explorer," which, in effect, he has been since. Ernst Bessey was in administrative charge of the unit.

A section of fiber investigations was created in the Division of Statistics in 1889, but was given independent status in the following year. Under the guidance of C. R. Dodge it was charged with collecting and disseminating information on the cultivation of fiber plants, with carrying on experimental plantings of new and hitherto unused textile plants, and with distributing seed and plants for experimental purposes. The unit was merged with the Division of Botany on June 30, 1898.

It may not be out of place to relate briefly the beginning of the work in soils in the department as taken from Galloway's notes since that work is now a part of the bureau's research program. A close correlation existed then as now between the work in soils and the plant units. In 1893–94, Galloway was carrying on studies of lettuce diseases in his own greenhouses at Garrett Park, none being available elsewhere. In the course of this work he encountered certain phenomena which seemed attributable to soil peculiarities. Learning of the work on the effect of soils on plant growth being carried on in Baltimore by Professor Milton Whitney, he paid him a visit and later reported the results to Dr. Charles W. Dabney, Assistant Secretary. The latter was very much interested and, deciding that soil studies should be taken up in the department, commissioned Galloway to again contact Whitney and offer him a position in Washington. Whitney agreed to come if sufficient funds were available for equipment and assistance, which were duly provided by transfer from the Weather Bureau. Thus the Division of Soils speedily came into existence in two attic rooms of the old main building adjoining those of Vegetable Pathology. Their respective chiefs became great friends.

At this point, it may be in order to digress a moment to weave into the record a short account of the Division of Microscopy set up in 1871. This division was presided over by Dr. Thomas Taylor until it was abolished in 1895. Taylor had been educated abroad in physics and chemistry and during the Civil War came to Washington at President Lincoln's request to look into the matter of faulty artillery shells. One might gather from Taylor's papers that he was in large measure to be credited with winning the war. No one knows how he got into the Department of Agriculture, but 1871 found him securely seated behind the only microscope in use in the department. In the years that followed, he dabbled in almost every conceivable biological problem that the writings of others opened up to him. He wrote on plant diseases, the house fly, microscopical technique, cranberry culture, animal diseases, adulteration of butterfat and lard, microscopy of fibers, and turned out a series of compiled reports and separate booklets on our common field and forest mushrooms. These latter, prepared and sold as a private venture, were illustrated by colored plates made by the government printer! The only outstanding feature of these publications was the colored illustrations in part from the earliest paintings of the late L. C. C. Krieger, the outstanding botanical artist. If Dr. Taylor had been holding forth in academic circles, he could well have been said to have occupied not a chair but a settee of biology.

His voluminous writings have been almost universally and unanimously ignored by later workers who have had any occasion to work in the fields through which he wandered. Even historical writers have passed by his writings in the same silence which has been observed in the preceding account of the development of plant disease studies in the department. His colleagues apparently entered into a conspiracy of silence concerning him and practically no written references to him or his work can be found.

The division was abruptly discontinued by Secretary Morton as of June 30, 1895, on the grounds that Taylor's projects were either finished or could be handled better by other divisions. His entire appropriation for 1896 was permitted to revert to the Treasury and that part of his office equipment and records which he did not carry off were turned over to other divisions.

An account has now been given of the several units functioning in the field of plant research in the Department of Agriculture at the turn of the century, with rather sketchy notes on the problems with which they were working, and a few details of the personalities involved. In brief, some seven agencies, completely and at times militantly independent of each other, were carrying on the plant research of the department, competing for funds, overlapping in many respects in their projects, and all in all, in great need of coordination and reorientation. The policy appeared to be to meet new situations by setting up new agencies, a policy that has not yet completely passed out of governmental practice.

There appear to have been no discussions in the department prior to 1899 or 1900 looking to reorganization of the plant units; a divisional organization seemed destined to be the ultimate end of things. Something was needed to touch off the situation and this occurred on September 11, 1900, with the death of Saunders. He had conducted his establishment for forty years without an understudy, and the Secretary in casting about for his successor, picked Galloway although others were active in seeking the position.[15] Coville in particular believed strongly that Gardens and Grounds should logically become a part of his Division of Botany.

Having transferred Galloway to the Gardens and Grounds work, and appointed A. F. Woods to succeed him as Chief of Vegetable Physiology and Pathology, very clearly at B. T.'s suggestion, the Secretary requested him to make recommendations as to ways and means of making the division more widely useful to the other plant units of the department. A close tie with Gardens and Grounds was something that these gentlemen had been dreaming of for years, since their work had been greatly handicapped by lack of greenhouses and field plot facilities, all heretofore jealously guarded "working tools" of Saunders. Plans were speedily drawn up for close integration of the work and facilities of the two divisions. It also seemed the moment to plan for a still more startling reorganization. As Galloway himself tells it:

> In our work in plant physiology and pathology we were closely associated with Milton Whitney, who was Chief of the Division of Soils. Both divisions were in the same little building on Thirteenth Street, and our laboratories were used interchangeably. We discussed all of our problems together. Milton Whitney, being a man of vision, saw the opportunity for still further extending and broadening the plant work, and, after conferences with him and other men in the Division of Plant Physiology and Pathology, we decided to shape up a plan for the union of all of our plant activities along the same lines as those already effected between Plant Physiology and Pathology and Gardens and Grounds. Professor Scribner was the first man consulted and he was agreeable. G. B. Brackett, Chief of the Division of Pomology, was abroad, but we consulted with William A. Taylor, the Assistant Chief, and he favored the plan. We could not bring Mr. Coville, however, to an understanding of our aims and objects. He disapproved any plan whereby the Division of Botany might be brought into closer contact and association with the other branches.[16]

Coville's position was not so much one of antagonism to a plan for coordinating the botanical work, but rather that he objected violently to such a plan being forced on him by "squirt-gun pathologists" and others whom he did not consider real botanists, and who clearly had no intention of asking him to head the proposed new organization.

In spite of Coville's objections, the Secretary under date of October 1, 1900, issued the following order:

> For the purpose of unifying the work of certain branches of the Department it is hereby ordered that the Chief of the Division of Vegetable Physiology and Pathology, the Chief of the Division of Agrostology, and the Chief of the Division of Pomology confer on matters of general policy and plans with the Superintendent of Experimental Gardens and Grounds, who is herewith designated as Director of Plant Industries. In carrying out this order the several branches of the Department named will maintain their present integrity and organization.[17]

A detailed account of his reasons for taking this step will be found in his report for 1900.[18]

Opposition to the plan was not silenced, however, and a protest signed by Coville of Botany,

[15] James Wilson, Secretary of Agriculture, General Order No. 29, Sept. 14, 1900. Historical File, Plant Industry Station, Beltsville, Md.

[16] Unpublished records of B. T. Galloway. Historical File, National Fungus Collections, Beltsville, Md.

[17] James Wilson, Secretary of Agriculture, General Order No. 31, Oct. 1, 1900. Historical Files, Plant Industry Station, Beltsville, Md.

[18] James Wilson, "Report of the Secretary of Agriculture," U. S. Department of Agriculture, *Yearbook*, 1900, p. 75–76.

L. O. Howard of Entomology, H. W. Wiley of Chemistry, and Gifford Pinchot of Forestry, was presented to the Secretary. Galloway, on being given an opportunity to explain his plans, found that the latter three had not been properly informed of the situation. Once the plan was set forth for them in detail, Wiley and Pinchot became its ardent supporters and the more extensive four bureau plan soon came into being. The protest itself was without effect insofar as blocking the reorganization was concerned.

When Congress convened in December, 1900, considerable interest was shown by members concerned with agricultural matters. Galloway and his associates now felt the time had come to push for a bureau plan with an elastic project system. After a number of hearings which were granted to members of the department for the first time, the committee on agriculture recommended to the Congress that the four bureaus be authorized. With favorable action in sight, the Secretary had decided that Botany would become part of the Bureau of Plant Industry, and such was its fate. Unfortunately, the new reorganization plan was thrown out of the appropriation bill on the grounds that it was new legislation. But all was not lost. A more friendly atmosphere prevailed in the Senate, and Senator Redfield Proctor, chairman of the agricultural committee, told the Secretary to go as far as he liked. It developed that both the Senator and his secretary, a Mr. Emory, not only were not well informed on Agriculture Department matters, being new in Washington, but Emory in particular had no experience in preparing bills and arranging data necessary to answer possible questions from the floor. At the Secretary's request, Emory and Galloway worked nights and Sundays for three weeks preparing the bill and the accompanying factual information. When the bill came up for consideration, there were rumors of opposition. When Senator H. M. Teller of Colorado with a desk piled high with books and papers rose to speak, there was much uneasiness on the part of Galloway, Pinchot, and others supporting the bill. Surprisingly enough, it developed that he was speaking on the right side and appeared to be completely informed on all phases of the subject. This remained very much a mystery for some days until Erwin F. Smith calmly remarked to Galloway, "It ought to have been a good speech because I sat up with the Senator nearly all night helping him prepare it." Without further difficulties the bill was passed, agreed to in conference, and became law, effective July 1, 1901.

So on that July morning, Beverly T. Galloway found his dream realized and he had no problems thereafter beyond the difficulties of amalgamating seven heterogeneous units and persuading the personalities associated with them to co-operate in making the new bureau a going concern. His success, despite many misgivings on the part of friends and well-wishers, is a matter of history. Many tributes have been paid to him but none was more surprising than that from his old antagonist, Frederick Vernon Coville who, after stating that "my judgment is not biased by personal liking for him," wrote as follows:

> The Bureau of Plant Industry is the chief finished product of Dr. Galloway's ability as an organizer. The material out of which this Bureau was formed consisted of six or seven badly correlated divisions engaged in technical investigations of agricultural plants. . . . The present organization . . . is undoubtedly the most useful bureau in the Department and by far the best example of a bureau conducting a large amount of research work and turning the results over to the public in the form of definite recommendations for changes in existing agricultural practice.[19]

In the limited space available, much has been omitted that rightfully forms part of this account of the genesis of the bureau which the writer has been attempting to present. Many individuals have gone unmentioned, many problems of direct concern have been passed over. The seeker for further knowledge can only be referred to the extensive and informative reports and other published writings of those whose work made the Bureau of Plant Industry.

In conclusion, there may be appropriately quoted what may be considered Galloway's creed as given in his first annual report as bureau chief:

> Our policy is to give the broadest opportunity for each branch of work, to unify the various interests, and to bring about a spirit of harmony and friendly rivalry stimulating to all. The results fully justify the statement that nowhere will be found a more united organization and a more earnest desire on the part of each officer to make his work second to none of its kind in the world.[20]

[19] F. V. Coville to President J. G. Schurman, Cornell University, April 29, 1914, Cornell University, Ithaca, N. Y.

[20] B. T. Galloway, Report of the Chief of the Bureau of Plant Industry for 1901, p. 44 (1901). Historical Files, Plant Industry Station, Beltsville, Md.

THE WAR VETERAN AND THE PUBLIC LANDS

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When the thirteen British colonies in North America severed their political connection with Great Britain, it was not at all strange that they should turn to the distribution of their undeveloped lands as a means of making war service more enticing. The vacant lands cried for development; furthermore there was a long historical tradition of granting land to veterans. Herodotus mentions such a practice. The classic example from antiquity is, of course, the Roman custom of rewarding the veterans of its legions with land. The colonies themselves had offered tracts on the frontier to men who would form buffer settlements against Indian forays.[1] The Proclamation of 1763 had provided grants of land to regulars of the British army and navy for service in the French and Indian War.

The colonies had a strong distaste for professional or mercenary forces. In that light, what more appropriate reward could there be for the citizen who had served his country than a portion of the rich, undeveloped land? Although largely unnoticed, the United States is still offering land to its veterans. On the reclamation projects of the Far West, parcels of the public lands are still opened, periodically, to settlement under the Homestead Act and the regulations of the Bureau of Reclamation. Veterans of World War II have been granted a ninety-day filing preference on land opened for public settlement.[2] In this day of veterans numbering in the millions and arable acres in the thousands, veterans with farm experience (required by the Bureau of Reclamation) are now the only ones who can still acquire a farm under the historic Homestead Act. And even these farms are so limited in number that they are awarded by lottery.

Somewhat ironically, the history of land grants to veterans began in the United States with attempts to woo German mercenaries away from the British armies. On August 14, 1776, the Continental Congress announced a bounty of 50 acres of land to "all such foreigners who shall leave the armies of his Brittanic Majesty in America."[3] Two years later Congress enlarged the grants. In a resolution of April 29, 1778, it offered to "officers and soldiers of the King of Great Britain, not subjects of said King" a land bounty graduated in rank from 800 acres for a captain to 50 acres for a private.[4] From the inconclusive record it is difficult to know whether the response was as enthusiastic as the appeal. It has been determined that there were some 5,000 deserters from a total force of 30,000 German mercenaries.[5] It has not been determined how many subsequently applied for and received land.

A month after the initial appeal to the Hessians the Continental Congress offered land to its own citizens as an inducement to enter service. Before September 1776 the military forces of the rebelling colonies consisted of the militia and volunteers of the several colonies. General George Washington was thoroughly dissatisfied with their showing against British regulars. After the defeat at Long Island in the summer of 1776, Washington urged the creation of a continental army and suggested that the "addition of Land might have a considerable Influence on a permanent Inlistment."[6]

Congress acted, on September 16, 1776, by establishing 88 battalions and providing for a land bounty in graduated allotment from 500 acres for a colonel to 100 acres for a private.[7] Congress was thus offering land which it did not have to give. In 1776, all that Congress possessed was the expecta-

[1] Amelia C. Ford, *Colonial Precedents of Our National Land System as it Existed in 1800* (*Bulletin of the University of Wisconsin*, No. 352, History Series, Vol. 2, No. 2, Madison, 1909–10), 103–07.

[2] *U. S. Statutes at Large*, 58: 748. The diminishing availability of public land after World War I is reflected in the granting of filing preferences to veterans; *ibid.*, 41: 434; *ibid.*, 42: 358; *ibid.*, 46: 580. For an example of qualifications and procedures see Public Notice No. 43, August 13, 1946, *Federal Register*, 11: 8736–39.

[3] Worthington C. Ford, ed., *Journals of the Continental Congress* (37 vols., Washington, 1907–37), 5: 654.

[4] *Ibid.*, 10: 405–09.

[5] Edward J. Lowell, *Hessians in the Revolution* (New York, 1884), 300.

[6] John C. Fitzpatrick, ed., *The Writings of George Washington* (39 vols., Washington, 1931–44), 6: 6.

[7] Ford, *Journals*, 5: 763.

tion of acquiring the British Crown Lands in America. Maryland at first did not concur in offering land. As the battalions of the Continental Army were raised by the states, Maryland's refusal forced an immediate consideration of the vexatious problem of the future ownership of the Crown Lands. It was a problem not fully settled until 1802 when Georgia, last of seven states with substantial claims, ceded its rights to the central government.[8]

Notwithstanding, Congress, in 1780, extended the land bounty to major-generals and brigadier-generals in the amount of 1000 and 800 acres, respectively; and it also granted bounties in the medical department on a scale comparable to those in the line services.[9]

Men came forward to serve but no effective system was in operation until 1796 to provide their bounty lands. Before Congress could grant any land it had to acquire undisputed title to the western lands. Even after the conclusion of the Revolution this involved not only the claims of seven states but also the problem of Indian title. And last of all, a manner of survey had to be determined. In short, a general land policy had to be outlined.[10] In consequence of all these complications, none subject to quick or easy solution, delay in granting the bounty lands was inevitable.

The famous Ordinance of 1785 ". . . for Ascertaining the mode of disposing Lands in the Western Territory" did provide for surveys of bounty lands but none were conveyed during the life of the Confederation.

In an indirect manner, however, the Confederation did redeem some of the land pledges through the agency of the Ohio Company. The principal promoters of that company were Continental officers eager to use their land bounties in promotion of a land company. The Confederation Congress approved a contract, July 25, 1787, for the sale of public lands to this Ohio Company.[11] It provided that one-seventh of the acreage could be paid in military land warrants. The tract was reserved in Ohio, as was that of John Cleves Symnes who purchased a tract under a similar arrangement. The sale price in both cases was one dollar an acre calculated in the depreciated Continental currency. By these arrangements the government met 238,694 acres of their military land obligations.[12]

An important obstacle to the settlement of the western land problem in general and the bounty land problem in particular had been overcome on March 1, 1784, when Virginia signed its deed of cession to its western claims.[13] The cession specifically reserved two tracts. A reserve of 150,000 acres, ultimately located near the falls of the Ohio, was assigned to the men of the George Rogers Clark expedition. Another reserve was authorized north of the Ohio River between the Scioto and Miami Rivers.[14] The second reserve was established in case there was not enough land south of the Ohio to satisfy the Virginia bounties. The Congress of the new federal government confirmed the reservation in 1790.[15] This reserve is noteworthy. Within its bounds 3,770,000 acres were located.[16] Its administration illustrates how long veteran benefits can command legislative attention. Although the reserve was abolished in 1852 when Virginia, in consideration of a scrip law, ceded the unlocated portions to the United States, Congress passed legislation concerning the Virginia bounties as late as 1871.[17] Between 1790 and 1871 the Congress adopted forty-six acts relating to the Virginia Military District.

In 1796, twenty years after the first bounty enactment, the federal government allotted a tract in Ohio for the location of the Revolutionary bounties.[18] The tract, although not so named in the act, became known as the United States Military District. All land taken as Revolutionary bounty, except that in the Virginia reservation, had to be located here until 1830. Scrip was then issued which could purchase land in Ohio, Indiana and Illinois.[19] A total of 2,095,220 acres was patented in the dis-

[8] See Rudolph Freund, "Military Bounty Lands and the Origins of the Public Domain," *Agricultural History*, 20: 8–18 (January, 1946).

[9] Ford, *Journals*, 17: 726–27; 18: 846.

[10] The complications are admirably analyzed in William Thomas Hutchinson, The Revolutionary Bounty Lands in Ohio (unpublished Ph.D. thesis, University of Chicago, 1927).

[11] Ford, *Journals*, 33: 400–01.

[12] U. S. Congress, *American State Papers, Public Lands* (8 vols., Washington, 1832–61), 7 Cong., 1 sess. (1801), 1: 119.

[13] Ford, *Journals*, 26: 112–17.

[14] *Ibid.*, 115.

[15] U. S. *Statutes at Large*, 1: 183.

[16] Thomas Donaldson, *The Public Domain, Its History with Statistics* (47 Cong., 2 sess., House Misc. Doc. no. 45, serial 2158, Washington, 1884), 233.

[17] U. S. *Statutes at Large*, 10: 143.

[18] *Ibid.*, 1: 490–91.

[19] *Ibid.*, 4: 422–25.

trict, seventy per cent of it by approximately one hundred men.[20]

Thus the national government delivered 9,549,949 acres of public land to the veterans of the Revolution (or their descendants).[21] The last warrant was issued in 1886, one hundred ten years after the enactment of the first Revolutionary bounty.[22]

When Congress undertook to organize the military establishment for the War of 1812, it was in a position to act with more assurance since it now held an indisputable title to the public domain. In increasing the regular army, Congress featured a land bounty as an essential part of the authorization. It offered, in 1811, a 160-acre bounty plus three months' extra pay for the completion of five years of service, or less, if deemed proper by the government.[23] This practice was standard until the very close of the war, when the bounty was doubled.[24] Officers were not given land until 1855, when they received a retroactive bounty. Members of the naval service who had been excluded in this and previous bounties also received land in the 1855 act.

The Congress reserved six million acres "fit for cultivation, not otherwise appropriated and to which the Indian title has been extinguished" for the satisfaction of the War of 1812 military warrants.[25] This land was reserved in three tracts of two million acres each in Michigan, Illinois and Louisiana territories between the St. Francis and Arkansas Rivers (in the present state of Arkansas). The lands in Michigan were later adjudged unfit for cultivation and new reservations were provided in 1816: one of 1,500,000 acres in Illinois Territory and another of 500,000 acres in Missouri Territory north of the Missouri River.[26] These land awards to old soldiers were not to be seized "by virtue of any process, or suit at law or judgement of court" for debts contracted prior to the issuance of patent. The War of 1812 cost the United States 4,452,760 acres of its public lands.[27]

In the 1830's military land obligations figured prominently in the accelerated speculation in western land. In 1830 Congress authorized the exchange of Virginia warrants for assignable scrip for the purchase of lands open to sale in Ohio, Illinois and Indiana.[28] There was, however, provision against purchase of more than 200,000 acres by one individual employing such scrip. Two other acts converting military land warrants into scrip were passed in the early 1830's. By these acts Revolutionary and Virginia warrants were converted into scrip for the purchase of public lands.[29] Under the 1832 act, 300,000 acres passed to private ownership; under that of 1833 another 200,000 acres were withdrawn.[30] After 1842, warrants for the Revolution and the War of 1812 were honored for any land open to private entry.[31]

In organizing for the War with Mexico the public domain was once again used as a means of inducing enlistment. Each soldier who served twelve months was entitled to 160 acres of any land open to public sale.[32] The Congress also gave soldiers the option of land or treasury scrip worth $100 bearing six per cent interest. For men who served less than one year, forty acres or $25 in scrip was offered.

Immediately after the Mexican War the approach to land bounties was radically changed. The land bounty had been an inducement for enlistment. After 1850 land was given to men

[20] Hutchinson, The Revolutionary Bounty Lands in Ohio, 157.

[21] This is an approximation based upon the following figures: Ohio Company and Symnes tracts, 238,700; Virginia Military District, 3,770,000; United States Military District, 2,095,220; scrip (1830–35), 1,478,293; scrip (1852), 1,041,976; and the act of 1855, 925,760. This total does not include the grants, some of them very generous, made by the various states. See Mattias N. Orfield, *Federal Land Grants to the States with Special Reference to Minnesota* (*University of Minnesota Studies in Social Science*, no. 2, Minneapolis, 1915), 23–25; Allan Nevins, *The American States During and After the Revolution* (New York, 1924), 672.

[22] Hutchinson, The Revolutionary Bounty Lands in Ohio, 177.

[23] U. S. *Statutes at Large*, 2: 669.

[24] *Ibid.*, 2: 672; 3: 96, 97, 146, 147.

[25] *Ibid.*, 2: 729–30.

[26] *Ibid.*, 3: 332. The military lands in Illinois have been studied by Theodore L. Carlson, *The Illinois Military Tract, A Study in Land Occupation, Utilization and Tenure* (*University of Illinois Studies in the Social Sciences*, vol. 32, no. 2, Urbana, 1951). The land passed quickly into the hands of speculators, large and small, at an average $115 per quarter section. The small speculators suffered in the Panic of 1819. The success of large holders was variable, according to the sampling provided by Carlson.

[27] Donaldson, *The Public Domain*, 236.

[28] U. S. *Statutes at Large*, 4: 422–25.

[29] *Ibid.*, 4: 578, 665.

[30] Donaldson, *The Public Domain*, 236.

[31] U. S. *Statutes at Large*, 5: 497.

[32] *Ibid.*, 9: 125–26.

whose service had not been covered in previous bounty grants. In the first of these inclusive acts, which passed in 1850, land was given to each of the surviving

> . . . commissioned and non-commissioned officers, privates, whether of regulars, volunteers, rangers or militia in the War of 1812 or any Indian war since 1790 and to each commissioned officer in the War with Mexico . . .

or their widows or minor children, graduated according to term of service: for nine months, 160 acres; for four months, 80 acres; and for one month, 40 acres.[33]

In 1855 the most important bounty act, in terms of acreage conveyed, granted 160 acres to

> . . . commissioned and non-commissioned officers, musicians, privates whether regulars, rangers or militia . . . and every officer, commissioned and non-commissioned, seaman, ordinary seaman, flotilla man, marine clerk or landsman in the navy in any of the wars since 1790, and the survivors of the militia or volunteers, or State troops . . . whose services have been paid by the United States.[34]

Also listed as beneficiaries of the national gratitude were wagon masters and teamsters, volunteers at the Battle of King's Mountain in the Revolution; volunteers at the Battle of Nickojack against "the confederated savages of the south"; volunteers against the British attack on Lewiston, Delaware in the War of 1812; and the chaplains in all wars. In 1856 the bounty was extended to officers, seamen and marines in the naval service during the Revolution.[35] To be eligible under the 1855 act 14 days service or participation in one battle was required.

Of the 73,000,000 acres of public land conveyed as bounty for war service, almost one-half (32,000,000) was given under the 1855 grant.[36] This acreage was thrown into the speculative whirl of the 1850's when Congress, in 1852 and 1858, declared land warrants assignable.[37] They were declared such for the ostensible purpose of allowing a veteran who could not take up land himself to realize something on his warrant. For several years during the 1850's the amount of land taken by military warrant was one-third again as much as that sold for cash. The Secretary of the Interior reported in 1851 that in the preceding year 2,454,000 acres had been conveyed by military warrant while 1,846,847 acres had been sold for cash.[38]

Assignability forestalled placement of freeholding veterans on the land. Warrants and scrip became circulating media, their value noted in newspapers and financial journals. With government land selling at a minimum of $1.25 per acre, there was an automatic ceiling to their value. Prices fell as low as sixty cents per acre. Warrants were purchased in the East, where their number and the distance from available land made them cheap, and sent to the West where they could be sold to the hosts of locators swarming around land offices.[39]

But there was keen opposition in the public land states to this practice of purchasing large blocks of land for speculation. The Congressmen from these states were adamant against assignability of scrip. In the 1850's they viewed such bountiful land gratuities as cursed schemes to withhold land from the actual settler. Westerners were particularly stung at the thought of Eastern and even foreign capital holding Western land *in mortmain*.[40]

To give land and at the same time prevent speculation bordered on the impossible. "I suppose whatever regulation were adopted," one legislator admitted, "unless we adopt the law of primogeniture, and deny to the holders the right of conveying it away [speculation] will follow. . . ."[41] In fact Thomas Hart Benton, Missouri's famous expansionist senator, advocated such entailment. He wished to entail bounty lands so that they might not be sold. Even if sold, he would have provided that they be made recoverable by widows or other heirs.[42]

Even Congress itself was charged with being a party to speculation in military warrants. One

[33] *Ibid.*, 9: 520.
[34] *Ibid.*, 10: 701.
[35] *Ibid.*, 11: 8.
[36] See table at end of article.
[37] U. S. *Statutes at Large*, 10: 3; 11: 309.
[38] *Congressional Globe*, 32 Cong., 1 sess. (1851), appendix, 9–10.
[39] Such transactions are sketched in "Letters of J. W. Denison," *Iowa Journal of History and Politics*, 31: 96 (1933).
[40] For examples of western feeling, see *Congressional Globe*, 31 Cong., 1 sess., Pt. 2 (1850), 1275; appendix, 1685–86.
[41] *Ibid.*, appendix, 1686.
[42] *Ibid.*, 29 Cong., 2 sess. (1847), 192; 31 Cong., 1 sess. (1850), appendix, 1686.

western senator asserted, in 1856, that the House (where he had served in 1852) had a direct stake in assignability because members "had their pockets full of land warrants."[43]

Cash in lieu of land was often suggested as a means of reward but little attention was given to the proposal. Veterans themselves were more interested in land than in other forms of reward. The 1847 Mexican War bounty gave a choice between land and treasury scrip. In 1850 a report of the Secretary of the Interior indicated an overwhelming preference for land. Land scrip had been allowed for 70,390 men against 2,992 who wanted Treasury scrip.[44]

The prairie states of the Mississippi Valley were the arena of settlement during the years when the military land warrants were most abundant. It is not surprising, therefore, that Iowa was settled in large measure by application of the military land warrants. In no other state did settlement by military warrant figure so prominently. Over 14,000,000 of Iowa's 36,000,000 fertile acres were conveyed as a reward to veterans, although it is questionable whether the veterans received the real benefits.[45] Illinois and Missouri followed Iowa as second and third states for the location of bounty lands.

The government showed utmost consideration to claimants; at least it would appear so from official records. Its leniency doubtless made it prey to petty frauds, although it denied thousands of fraudulent claims. At the same time, Congress extended itself to make certain that veterans could come into possession of their land warrants. It once went so far as to pass an act accepting verbal evidence as to service.[46] There were numerous acts for re-issuance of lost warrants, and Congress passed numerous acts to extend the time limits for locating bounties.

There was never concerted attack on the principle of granting land to veterans. Robert Toombs, the Georgia statesman, was one of the few outspokenly opposed. Men taking issue during debate were always careful to announce that they were arguing details only.

Echoes of shady dealings and sharp practices sounded in Congressional halls. One senator reported that ex-soldiers bothered him for years with letters seeking relief because they had sold their warrants for two, three or five dollars.[47]

The passage, in 1862, of the long-awaited Homestead Act precluded the granting of Civil War land bounties. Men devoted to the homestead principle realized that the land bounties, if voted, would be a means by which speculators could engross thousands of arable acres to the detriment of home-seeking freeholders. Led by George W. Julian, Indiana Republican and Chairman of the House Public Lands Committee, homestead defenders thwarted repeated bounty efforts.

The original Homestead Act gave minor privileges to Civil War veterans. In 1872, in answer to the demand for a bounty act, veterans were granted the privilege of having their service counted as residence time upon a homestead, except that a minimum residence of one year was required.[48] But even after this concession, proposed by Julian, which certainly made acquisition of land by an interested veteran a simple matter, there was pressure for military bounty land.

Another attempt to vote a land bounty was made in 1873 when an amendment to a bill granting further privileges to veterans under the Homestead Act would have authorized a grant of 160 acres to men who had served more than ninety days in the army or navy during the Civil War. This amendment passed in the House but failed in the Senate, possibly because an adverse committee report marshalled a tremendous array of facts against it.[49] Such a grant could conceivably have used all of the remaining arable public lands to satisfy its terms. The Commissioner of the General Land Office practically branded the bill a scheme of land speculators who needed a new issue of military warrants to replenish their "stock in trade."[50]

The blessings of the military land bounty system were mixed. There are no exact figures, but it is fairly evident that the percentage of veterans receiving land was small. In effect many received a cash bounty to the amount that their warrant would command on the open market. One study

[43] *Ibid.*, 34 Cong., 1 sess. (1856), 928–29.

[44] *Ibid.*, 31 Cong., 1 sess. (1850), appendix, 21.

[45] Roscoe L. Lokken, *Iowa Public Land Disposal* (Iowa City, 1942), 149.

[46] U. S. *Statutes at Large*, 11: 8.

[47] *Congressional Globe*, 30 Cong., 2 sess. (1849), 265.

[48] U. S. *Statutes at Large*, 17: 49–50.

[49] *Congressional Globe*, 42 Cong., 3 sess. (1872), 167.

[50] *Senate Reports*, 42 Cong., 3 sess., 482, serial 1550, p. 14.

has suggested that this was the understanding of both the soldiers and statesmen of the Revolution.[51]

In the interest of orderly disposition of the public lands, an outright cash bounty might have been more to the point, but the veterans themselves were not interested in cash while there was a prospect of obtaining land. And to the West "orderly disposition" would have meant more administration and less land. The cash resources of the federal government left the public domain its one readily available asset to meet the need to reward war veterans. And insofar as the bounty acts promoted "early settlement" and "substantial cultivation," they were justified within the expansive dynamic of nineteenth century America.

[51] Hutchinson, The Bounty Lands of the Revolution in Ohio, 7.

Summary of Land Located Under Various Bounty Acts

No. Warrants	*Acreage*
Act of 1776	9,549,949
Act of 1812	4,807,520
Act of 1847	12,956,520
Act of 1850	12,864,200
Act of 1852	680,200
Act of 1855	32,627,010
	73,485,399[52]

[52] The Revolutionary total is computed from scattered statistics, *ante* 164–5. The remainder are from the U. S. Commissioner of the General Land Office, *Report* [with detailed statement of business by divisions], 1907, p. 195. In 1907 there were 18,730 warrants outstanding covering 2,138,180. In 1951 the Secretary of the Interior refused to accept military warrants filed upon off-shore oil lands in the Gulf of Mexico.

A NOTE ON THE SPANISH AND MEXICAN CEREMONY CONVEYING POSSESSION OF LAND[1]

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The formal act of taking possession of land has often been accompanied by some set form or ceremony varying from country to country. In Anglo-Saxon England when the king granted lands, or more accurately, granted certain immunities to lands, an agent of the king was often sent out to ride the bounds of the land as they were read out in a loud voice from the charter. In 896, when Aethelwald had been petitioned to confirm some land to the church at the request of Bishop Werferth, he announced that justice would be done: "So with the utmost graciousness, he yielded to the bishop and bade his geneat, named Ecglaf, ride with a priest of the Worcestermen named Wulfum. And he then led him along the bounds, while he read them to him from the old charter."[2] In the Saxon period and later after the Conquest, livery of seisin was combined with such symbolic actions as the handing over of a lump of earth, a twig, or a knife.[3]

Early explorers of the Americas, in taking possession of the land for their sovereigns, followed a ceremony similar to the feudal delivery of possession. The ceremonies conducted by La Salle at the mouth of the Mississippi, Saint Lusson at Sault Ste. Marie, and Balboa as he waded into the Pacific Ocean, bore a marked resemblance to the delivery of possession rites.[4] The leader advanced with a banner, on one side of which was the image of the Virgin Mary and Child, symbolizing loyalty to God; and on the other side of which were inscribed the arms of the sovereign, which symbolized loyalty to the temporal lord. A priest then uttered a prayer; the group chanted the "Te Deum" and "Vexilla Regis"; the commander drew his sword

[1] Grateful acknowledgement is made to Mr. John G. Farmer, Spanish Translator at the General Land Office for his assistance in translating some of the difficult passages. Also I wish to thank Dr. John Hugh Hill, Professor of European History at Texas A & M College for reading this paper and offering helpful suggestions.

[2] Carl Stephenson and Frederick G. Marcham, *Sources of English Constitutional History* (New York, 1937), 28.

[3] M. M. Knappen, *Constitutional and Legal History of England* (New York, 1942), 214.

[4] Francis Parkman, *La Salle and the Discovery of the Great West* (New Library ed., 39 vols., Boston, 1901), 3: 51–53, 306–08; H. H. Bancroft, *History of Central America* (3 vols., San Francisco, 1882–1887), 1: 370–72.

in one hand and held a clod of dirt in the other, and proclaimed in a loud voice possession of the land. The ceremonies ended with the notarized signatures of those present being recorded and a marker being placed at the spot.

As American pioneers advanced westward on the frontier and took up individual claims of land, the feudal ceremony was modified a great deal. Walter Prescott Webb in his book *The Great Frontier*, points out that the obsolete meaning of the noun "claim" was "a loud call; a shout" and that this ancient meaning was again used on the frontier "when some man, after a stiff race or a search, drove down a stake and shouted to all the world '*This is mine.*' "[5]

In granting title to lands in Mexico and Texas, the Spanish and Mexican governments used an elaborate ceremony of presentation. After the petition for land had been favorably acted upon by the judge, alcade, or the military commander, the adjoining landowners, interested parties, and an agent of the governor went to the tract of land being conveyed, and delivered formal possession. In a delivery of possession ceremony to Blas María de la Garza Falcon, we find this account:

> In execution of the concession I, said Judge, in the name of the State of Tamaulipas and in the presence of those already mentioned and of my following, took the said don Blas Maria de la Garza Falcon by the hand and led him over the land. He threw dirt, picked up sticks, pulled grass, drank water, irrigated the land and did other acts of true ownership and said in a loud and clear voice: Gentlemen—you who are present are my witnesses that I have taken possession legally, without contradiction of a third party who might have a better claim.[6]

A similar ceremony was followed in granting possession to Andrés de la Garza on November 16, 1831: "As a token of the control and ownership which he has acquired in the said three leagues of land, he irrigated, cut grass, pulled weeds, threw dirt to the four winds and did other acts of true and legitimate ownership and possession."[7]

From a title issued to Juan Ygnacio Pifermo by the solicitor of the town of Nacogdoches, Don José Cayetano de Zepeda, in the year of 1794, we find this account of the delivery:

> I gave him one league to the north and one league to the south and one league to the west and one league to the east; and taking said Juan Ygnacio Pifermo by the hand, I took him to the aforementioned leagues, and as a token of possession he marked trees, threw stones, drove stakes, and pulled weeds, and I granted him the corresponding possession in the name of His Majesty, Whom God Protect, before my attendant witnesses with whom I act, lacking a notary public, there being none in the designated limits, and on the present common paper for lack of that which is stamped, which I certify. Nacogdoches, 13th day of September of 1794. Juan Cayetano de Zepeda.[8] [rubric]

On February 21, 1800, Don José Cayetano, attorney general and surveyor of the town of Nacogdoches, granted possession of a place called Palo Gacho to Christoval Chonga (variously spelled as Chonca, and Sonca). On the date mentioned, Cayetano went to the tract called Palo Gacho, having cited Musihu Leone, the adjoining landowner, and asked him if it would do him any injury to grant Chonga the land, and he replied that it would not. Then followed the granting of possession:

> and taking said Christoval Sonca by the right hand and walking a few steps from north to south and another few steps from east to west; and then freeing his hand he walked freely on said tract of the Palo Gacho, he pulled weeds, dug holes in the ground, set stakes, cut small trees, picked up clods of dirt and threw them to the ground and did many other things as a sign of the possession I have given him. . . .[9]

It seems that Chonga had a great deal of difficulty in securing a valid title to this land despite the several elaborate ceremonies of delivery of pos-

[5] Walter Prescott Webb, *The Great Frontier* (Cambridge, 1952), 155.

[6] "Title of Adjudication of Land in Favor of Citizen Blas Maria Falcón, Resident of Matamoras," MSS in the Spanish Archives, General Land Office, Austin, Texas, Title 141, vol. 43: 5–6. The Spanish Archives in the General Land Office of Austin, Texas, contain 69 volumes in bound, manuscript form. There are four volumes on titles to missions and their secularization, and five volumes of Empresario contracts plus many titles to other persons. These volumes contain everything having to do with the lands of Texas and their disposition under the Spanish and Mexican rule from 1767 to 1836 although titles issued after November 13, 1835, are void. There is no continuity or chronological order followed in the volumes. Most of them deal with the period 1824–36. The individual volumes usually carry no title.

[7] Title No. 9, Vol. 69, Spanish Archives, General Land Office.

[8] "Title of Juan Ygnacio Pifermo," Spanish Archives, General Land Office, 37: 242.

[9] "Title of Christoval Chonga," Spanish Archives, General Land Office, 37: 58–59.

session. In a petition to the governor in 1810 he stated that this land had first been granted to him verbally by Gil Ybarbo in 1790. The first title and delivery, quoted above, had not been prepared on stamped paper, which was required. As he felt uneasy about the validity of his title, he now begged that it be granted anew in due and proper form.[10]

The tract of land was resurveyed and once again Chonga through his representative Louis Holloway was formally put into possession of the land on October 21, 1824. This time the ceremony was complete, with the addition of the hoe and gun as symbols:

> and taking with me Luis Holloway, representative of the former, who was carrying a hoe, instrument of the interesting branch of agriculture in one hand and a fire arm in the other, I took him by the arm and turned him loose inside the league which has been surveyed for him by favor and grant which was given to him in the name of the Supreme Government and Mexican Federation so that as legal owner he might possess, enjoy, dispose, and transfer to his heirs or alienate all or part in sale, gift or payment to any other person he might see fit, not being a foreigner; who being advised of this, laid down the gun, took the hoe in both hands and walking through it in every direction began to dig, pulling weeds, throwing rocks, breaking clods of dirt; and while he was doing this I asked him how he would defend the country which inclosed that grant which had been given him for his and his successor's maintenance, at which words he dropped the hoe, picked up the gun and said that with that gun and his life; on hearing that it had been conceded to him by the law of the same Supreme Government; at which valorous and well-founded reply, I repeated it to him telling him that he should enjoy as legal owner the aforesaid league without anyone being able to move him or inconvenience him by that right conceded to him.[11]

The many parts of this ceremony served a purpose. The use of the hoe as a symbol was to impress the grantee with his obligation to till the soil as was required by law; the gun was to remind him that he owed military service to the government to defend the land. The shouting, running about, pulling of weeds, the irrigation of the land, the summoning of adjacent landowners, served to notify all and sundry that he was taking possession of the land and if there were those who held a prior claim, they should then and there make it known or forever hold their peace.

[10] *Ibid.*, 37: 60.

[11] "Title of Christoval Chonga," Spanish Archives, General Land Office, 37: 71.

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E. M. PITTENGER

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BOOK REVIEWS

George N. Peek and the Fight for Farm Parity. By GILBERT C. FITE. (Norman, University of Oklahoma Press, 1954, xii, 303 p., illustrations and notes on sources, $4.00.)

The story of farm relief agitation rising out of a chronic agricultural depression after World War I is gathered around the imposing figure of George N. Peek, a pragmatic big business operator curiously turned agricultural reformer. Professor Fite's carefully constructed study shows Peek appearing as a leading farm policy framer, the man behind the McNary-Haugen bill, the organizer of a powerful farm relief movement and pressure group, a political crusader against Hoover in 1928 and for Roosevelt in 1932, first administrator of the A.A.A., and as an angry discard from the New Deal. The author candidly sets forth the disgraceful insufficiency, and worse, of the farm policies practiced during the Coolidge, Hoover, and first Roosevelt administrations. The book does not exaggerate George Peek's influence but it does not choose to discuss the man's larger significance as a key to the weakness of recent American farm policy.

Farm policy during the period here studied is a discouraging and tragic story. Professor Fite makes the most of it, and tells it well, though his partiality for depressed farmers and George Peek shows through. The author, by untangling many intricate and important developments, shows his impressive grasp of the economic and political problems bearing upon farm policy. With great industry he has sought out and utilized large quantities of previously unexplored archival materials though he has had to compress severely his findings and footnotes to meet the conditions of publication.

Professor Fite has traced the career of George Peek as a champion of equality for agriculture and thereby hangs a large part of the story of farm relief agitation and farm policy formation during the fifteen years following the farm panic of 1920–21. However, some questions remain to be answered within the frame of this study and many more questions remain in the broader field of farm policy making. What, for example, is the full explanation for the intense interest in agricultural affairs taken by such businessmen as George Peek and Bernard Baruch? Why should Peek and Herbert Hoover find themselves so bitterly in opposition and

how was it that Hoover was able to direct the resources of the Coolidge administration against Peek's McNary-Haugen plan? In the larger picture, how was the dominance of Peek over the agrarian reform movement made possible? Where were the farm organization leaders, where were the agricultural economists, what was the matter with the Department of Agriculture? How was it that farm relief planning got nowhere until 1925 when the Hoover farm board plan was placed against the McNary-Haugen plan? Neither one was a valid answer to the farm problem and both were supplanted, in time, by New Deal measures which did little more than intensify the problems of agriculture. Much more historical research is needed in recent agricultural affairs and it is hoped that Professor Fite will make further valuable contributions to fill up the blank spots in this field.

This book should have the close attention of all those who are interested in the recent history of the farm problem. Implicit are lessons in how not to approach that problem and warnings as to latter-day judgment upon the shortcomings of farm policy leaders.

The persisting farm problem that began in 1920 was vastly complicated by lack of a long-range program for betterment of the industry. The period of the Twenties and early Thirties was a critical time in the development of farm policies and those who steered policies in the wrong direction then bear a share of responsibility for continuing inadequacy. It is understandable that narrow contemporary horizons prevented a realistic assessment of the farm problem and the development of an enlightened program but the failure is nonetheless manifest. Towering above most other agricultural leaders of that time was George N. Peek. It was Peek who helped popularize the parity formula, who insisted with magnificent vigor upon price equality for agriculture, who drove farmers into adopting the two-price plan for their commodities, who helped keep them on the wrong side of high protective tariff doctrine. Peek desired price equality for agriculture without thinking through to other facets of the enduring farm crisis where problems were not mere price problems. By directing attention only to the matter of prices Peek impaired the search for more comprehensive means of rural improvement. The establishment of the parity idea was itself a measure of failure. Among a number of evils parity in practice means prices protected by harmful trade restrictions; it is an instrument of nationalistic economic policy out of keeping with the realities of life since World War I.

George Peek, almost by himself, gave drive and meaning to agitation for some effective means of farm relief when farmers had few friends in court and few leaders from among themselves who could command attention. Peek pushed and shoved to advance glittering "principles" and legislative panaceas which, in the end, were damaging rather than constructive. The paradox of Peek was that he believed in abundant production, he started the movement toward government assistance for price management, and he developed the political power of the farmers, yet he ended by being an America Firster and one of the most extreme critics of New Deal farm policy.

James H. Shideler, University of California, Davis

Irrigation Development and Public Water Policy. By Roy E. Huffman. (New York, The Ronald Press Company, 1953, 308 p., bibliography, index, $6.50.)

This is the most important book dealing with irrigation since Elwood Mead's *Irrigation Institutions* was published in 1903. The scope of the Huffman book is broader, however. Irrigation in Mead's time was uncomplicated by such issues as public v. private power, conservancy districts, or even interstate compacts. Dr. Huffman has written a very comprehensive book, and a very timely book. With many of our water policies being re-examined this book can make an important contribution to intelligent democratic processes. Theodore Roosevelt's Inland Waterways Commission found, in 1908, that there was a fundamental unity in the problem of water development; that even the problem of navigation on the Mississippi was intimately related to land use in the upper waters of the Missouri in Montana. Still it is a lesson that we generally have not learned. No one can read this book without being made aware of the complexity of a sound water problem.

Roy E. Huffman is well qualified to write this book. He was an agricultural economist with the Great Plains Water Conservation and Utilization Program for four years. He was Secretary of Montana Natural Resources Council for four years; and he is a member of the Missouri Basin Regional Research Committee and the Western Water Resources Committee. In addition to that he is the head of the Department of Agricultural Economics and Rural Sociology at Montana State College where he has developed a course in the economics of irrigation.

The historian will be most interested in the chapters dealing with the history of irrigation, the development of water rights, and of land policy. This is one aspect of American economic history which is too generally ignored. When dealing with the development of modern irrigation in the United States, the author has confined himself too closely to Utah sources. This reader does not want to minimize the contribution that the Mormons made to irrigation. They demonstrated that the desert would bloom if water could be brought to it. But to say that "Utah's claim to the title of 'Cradle of American Irrigation' is based, not on the date of the initial irrigation, but on the institutions of modern irrigation that were first developed there" (p. 15) is an exaggeration. The institutions for the control and administration of irrigation in Utah were at first designed for a highly homogeneous, theocratic society. The "ward" organization of the church provided the leadership. Church courts at first settled the water disputes. A

complex system of water rights was based on the division of stream flow rather than on priority of right to a specific flow. Later Utah adopted the Colorado Doctrine as the basis of water rights, and also the Colorado system of public administration of water. California furnished the example which has been copied by all seventeen western states for the organization of irrigation districts. The Mormon colonists did adopt some very enlightened conservation policies providing for the public control of vital watersheds, but the federal land laws prevented their perpetuation even in Utah.

The book is valuable for the information it contains on administration of irrigation enterprises. This material will be valuable to the voter in making his judgments of reclamation policy. The controversial question of limiting acreage under Reclamation Bureau projects is thoroughly treated and the conclusion is reached that "providing opportunities for family farming is the justification for use of interest-free public funds and must remain so, although a more flexible measure of what constitutes a family farm than the arbitrary limitation of 160 acres of irrigable land may be in order" (p. 61).

The chapter on basin development was the least satisfactory to this reviewer. The need for coordinated action is clearly set forth, but a program to secure coordination is not fully developed. The valley authority principle is not analysed as an experiment in public administration and the unsatisfactory conclusion which the author reaches is that "the viewpoint, however, that the TVA type of organization can be transplanted intact to the other river basins is just as dangerous and unrealistic as the attitude that the TVA is a socialistic endeavor not worthy of consideration in formulating administrative organizations for other river basins" (p. 167). There is no reference, by name, to the Pick-Sloane plan and only a slight reference to inter-bureau coordination for the development of the Missouri Basin. Surely there must be some lessons in coordination to be learned from that experiment.

It is hoped that the objections voiced here will discourage no one from reading this book. Wide reading will result in creating a public opinion that will demand a forward looking water development program.

In this era of power politics, the public should realize that our greatest hope for expanding our economy and population lies in the integrated development of our water resources. A reading of this book would convince them of that fact.

J. C. McKinnen, Colorado Agricultural and Mechanical College

Planting Corn Belt Culture. By RICHARD LYLE POWER. (Indianapolis, Indiana Historical Society, 1953, x, 196 p., illustrated, maps, index, $2.00 paper-bound.)

"Perhaps no other feature of mid-America has been of greater import in moulding men and life in America than its cornfields." This statement sets the key for a study which aims "to discover the content of two variants of early American culture" (upland Southern and Yankee), to describe "the conditions of their transit to the Old Northwest," and to understand "their contact and blending there." A wealth of original data supports the conclusion that neither Yankee nor Southerner stamped his impress upon the other, but both, "conquered as it were by the region itself," emerged as Westerners.

From 1800 to 1860 the West produced crossbreeding of culture as well as of corn. The contact period is marked by the natural awareness of contrasts in manner, dress, language, and farmways. Southerners did business on the confidence principle; "to the Yankee it was a lack of proper system, a sinful inefficiency. What to one was sound business practice indicated to the other a mean and suspicious spirit." But settlers' impressions varied greatly; when novelty wore off, moreover, so did interest in cultural differences: the time was ripe for amalgamation.

The author's purpose in introducing "new data in an effort to sketch with some detail the cultural diversities" has been conscientiously achieved: generous sampling from extensive materials has produced what is virtually an interpretative source-book. Disappointing, however, in view of the intention "to break down into specific elements a process of cultural genesis which has been hitherto blanketed with generalities," is the sketchy handling of differences and blending in religion, politics, and education. The style is sometimes awkward and once (p. 115) ungrammatical. But two basic, contrasting components of Middle Western culture—the Yankees' calculating cultural engineering and the Southern emphasis on the human equation—are clearly recognized; and the Southern influence, like "a sea which forever makes salty the fresh waters falling into it," is developed with understanding.

Frank R. Kramer, Heidelberg College

The Old Country Store. By GERALD CARSON. (New York, Oxford University Press, 1954, xvi, 331 p., illustrated, $5.00.)

Historians have been less prone than their colleagues in the natural sciences to look down their noses at the popularizer, and when the work of translating the solid scholarship of the monographs into racy prose and entertaining anecdote is carried out with skill such as is shown in this book by Gerald Carson, they can afford to be properly appreciative. It is true that they may question the balance of such a book, the reliability of some of the evidence, the dating of certain developments, and similar matters of detail, but if the general impression rings true, picayune criticism is beside the point.

Mr. Carson has undertaken to depict the salient characteristics of the country store as it existed in the northeastern and north central states in the period beginning roughly in 1790 and ending with the intro-

duction of the automobile. These boundaries in time and space are, however, not rigorously observed; if there is an amusing story to be told or a colorful character to be introduced, the author does not allow himself to be handicapped by slavish adherence to his stated terms of reference. The book is divided into two parts, the first dealing with the period 1791–1861, the second with the years 1861–1921. Again, however, this division is not to be taken too seriously. Banking historians will be surprised to learn that counterfeit notes were still a major problem to the eastern storekeeper in 1880 (p. 211); at least, 1880 is the date given on the previous page for the introduction of wire screening, and no indication is given that the reader is supposed to have skipped back several decades in the course of three paragraphs. And what kind of "washing powder" was available in the 1830's or 1840's to "make the bead" on adulterated whiskey (p. 27)? It is all very well for an author to try to give his readers a "feel" for the past; but sometimes one would like to know precisely what year one is supposed to be in. The dating of developments is weak throughout. Changes over time are underemphasized. Little consideration is given to local and regional differences.

But are these criticisms important? Presumably not, to the people for whom Mr. Carson is writing. This is a book designed for the general reader, not for the scholar —above all, not for the student. Mr. Carson has read a great deal and he is usually careful to give credit to his sources. The book moves at a rapid pace and is in parts highly entertaining.

Hugh G. J. Aitken, Harvard University

Rural Social Systems and Adult Education. By CHARLES P. LOOMIS and others. (Lansing, Michigan State College Press, 1953, viii, 392 p., 31 figures and 39 tables numbered separately in each chapter, appendix, $5.00.)

This meritorious study was sponsored by the Fund for Adult Education of the Ford Foundation, the Association of Land Grant Colleges and Universities, and executed by the Social Research Service of Michigan State College. The fourteen co-authors are mostly farm-born and reared, and mostly sociologists. They were commissioned to study the general programs of adult education, that is, "non-formalized, non-credit bearing, and non-vocational education" among rural people who had completed their formal education. In addition they were asked to ascertain if rural adult education included a study of three specific fields, (1) international understanding for peace, (2) strengthening of democracy, and (3) understanding and strengthening of the economy. Questionnaires were mailed to the many formal and informal organizations engaged in rural adult education throughout the United States. Since many of the questionnaires were not returned, the study tells more about the nature of adult education than it does about its magnitude.

The specialists discovered that the organizations most active in adult education are public schools, the Cooperative Extension Service, farm and religious organizations, and civic and service clubs like P.T.A. and the Lions. Their ambitious programs and courses encompass such diverse topics as safety and health, recreation and leisure time, family life, and public affairs. Most of the organizations prefer lectures and group discussion to panel discussions—a judgment in which the reviewer heartily concurs.

The picture of rural adult education in the three fields of peace, democracy, and economics shows less activity. Most of the organizations, however, include some education in at least one of these fields. The Jewish Agricultural Society and the National Catholic Rural Life Conference have emphasized economics. In contrast Protestant groups have stressed international relations. Although farm organizations have been active in all three fields, they have emphasized economic topics. The Cooperative Extension Service has been most active in the fields of peace and democracy. Leaders in most of these organizations expressed a great need for reliable and impartial information for use in studying these topics.

The major value of this study to us as historians is the information that it furnishes about the present day educational activities of our old friends such as the Grange and the Cooperative Extension Service. It helps us give our well-worn lectures on the history of rural America a "new look."

Clayton S. Ellsworth, College of Wooster

Food Administration in India, 1939–1947. By SIR HENRY KNIGHT. (Stanford, Food Research Institute, Stanford University Press, 1954, xii, 323 p., $7.50.)

Insuring food sufficiency for 400 million people under ordinary circumstances is a formidable challenge. Under conditions of war, divided administration and divided loyalties, civil disobedience, monsoon failures and cyclones, partition, mass migration, etc. it is little short of miraculous that the British Administration in India was able to develop food control from nothing in 1939 to a comprehensive system which by 1947 was providing rations to 160 million, primarily in India's cities and towns.

While the loss of Burma, India's main source of imported rice, to Japan, and the threatened invasion of India itself, caused some small steps to be taken to safeguard India's food position, it was the horrible Bengal Famine of 1943, "a tragedy which caused the deaths of probably one and a half million people and which shocked the conscience of the world," that marked the turning point in food administration in India. The first unsuccessful attempts to deal with the disaster, the gross mistake of judgment which led the Government of India to embark "on an ill-judged experiment of free trade in foodgrains," in the face of famine, were followed, as a result of the pressure of

public opinion, by the calling of the Third Food Conference, the abandonment of free trade, and the appointment of the Foodgrains Policy Committee in July 1943.

The policies laid down by the Committee were sound and their practical application enabled India to overcome the food crises of 1946 and 1947. Indeed the remarkable thing about food administration in India from 1939 to 1947 was that there was only one major famine, in the face of an extremely difficult and complex situation, government meddling, administrative slowness and ineptitude, lack of coordination between the various levels of government, etc.

Sir Henry Knight, the author of this comprehensive and scholarly study in the Stanford Food Research Institute 20 volume series designed to illuminate complex aspects of food and agriculture in World War II, spent 36 years as a member of the famed Indian Civil Service. During most of World War II, he was advisor to the Governor of Bombay (the first large Indian city to have rationing) and was responsible for the organization and rationing of foodstuffs. In 1946 he acted as Governor of Madras. Returning to Great Britain in 1947, he served as Advisor to the Secretary of State for India in the India Office. The Food Research Institute must have been aware of both the advantages and limitations of selecting a British career official to undertake this study. On the one hand there is the undoubted advantage of familiarity with facts and sources; on the other there is the reluctance to call a spade a spade when responsibility for incompetence or Government ineffectiveness is glaringly apparent. Consider, for example, this masterpiece of understatement on the Bengal famine:

While it was recognized that destitutes should return to their villages as soon as possible, this was impossible until there were food supplies in the villages, and therefore reliance had to be placed on the system of poorhouses, destitute homes and famine camps. Much selfless work was done by many agencies in organizing and working such institutions, and to many individuals and social and philanthropic societies credit is due; but taken together the arrangements did not work as smoothly as they should have. [A million and a half died! Reviewer] Primarily there seems to have been a failure to realize the physical and mental deterioration that inevitably affected the famine-stricken who had wandered from their villages to the city. (p. 100).

One can therefore both admire the comprehensiveness of the factual account and yet feel that the evaluation is more restrained than it might and ought to have been. In all fairness, Sir Henry does note that "Undoubtedly the Government of India (British) was slow to realize its responsibilities for feeding the common people of India," yet he seems to feel that by 1947 all had been done that could reasonably have been expected. It may be appropriate to ask whether the frontal and prodigious attack on agricultural productivity undertaken on a village level over the past two years in India, might not more properly have been instituted in 1942 or 1943 had the administration of that period been less tradition-bound and more imaginative.

Jerome B. Cohen, College of The City of New York

Planter Management and Capitalism in Ante-Bellum Georgia; The Journal of Hugh Fraser Grant, Rice-grower. By ALBERT VIRGIL HOUSE. (New York, Columbia University Press, 1954, Columbia University Studies in the History of American Agriculture, no. 13, xvii, 329 p., maps, index, $4.75.)

The appearance of the "Journal and Account Book, 1834–61, of Hugh Fraser Grant of Elizafield Plantation, Glynn County, Georgia" marks another milestone in the publication of source studies of Southern ante-bellum economic life, as well as in the Columbia University Studies in the History of American Agriculture. Doctor House's book, though delayed by the long, necessary research period and by the second World War, has been well worth waiting for.

The journal and acount book traces the economic career of a Georgia coastal plain rice planter for the twenty-seven year period just prior to the outbreak of the Civil War, a period during which he weathered the usual vicissitudes of planting, along with fires, epidemics among his slaves, and the irregular flooding of his lands by sudden freshets and high tides. In addition to the usual information given in plantation journals—weather reports, yearly planting routine, crop production, labor of slaves, as well as personal, family, slave and neighbor information—the records include factors' and overseers' accounts, slave lists, crop summaries, accounts with neighboring planters, and scattered tax returns. There are also short reports on cattle and poultry, plantation remedies, sick lists, plantation supplies issued, and a short directive on "How to Grow Rice." These materials make possible a complete case study of one rice planter who lived in a "large two-story frame dwelling graced by Corinthian columned porticos," managed a plantation of nearly two thousand acres, owned slightly over a hundred slaves, and whose crops of rice, along with some sales of Sea Island cotton, corn, and even potatoes, brought an income which in 1855 went over fifteen thousand dollars.

The editor's introduction, entitled "The Production and Marketing of Rice in Ante-Bellum Georgia," makes up approximately one fourth of the volume and is a significant monograph on the subject. It is divided into four divisions—Elizafield and its Owners; The Culture of Rice in Georgia; Finance, Supply and Management Practices; and The Milling and Marketing of Georgia Rice, 1830–1860—which include discussions of such important subjects as factors and the factorage system, production and supply of food stuffs, organization of labor, general plantation management, factors in the marketing of plantation products, plantations and the plantation system in the Georgia coastal area, slavery,

the role of Savannah as a distribution and commercial center, and, in considerable detail, a general discussion of rice and rice production.

The entire project has been carefully planned and organized, research for both the introduction and the edited source material has been detailed and broad, footnotes guide to all matters of importance without being so numerous as to make the work pedantic, and the style of the introduction is clean and precise. The book—like others of this type it took more painstaking planning, research and labor than would have a monograph of similar length—is a real contribution to the source history of the ante-bellum South.

Edwin Adams Davis, Louisiana State University

Nothing But Prairie and Sky. Recorded by WALKER D. WYMAN from the original notes of Bruce Siberts. (Norman, Oklahoma, University of Oklahoma Press, 1954, 217 p., $3.75.)

Listening to an old timer reminisce is often boring, irritating, and exhaustive of patience and tolerance, but at times it may be greatly rewarding. Walker Wyman, in sifting the rambling thoughts of Bruce Siberts, luckily uncovered a wonderfully rich and informative lode of social, economic, and anecdotal data on the South Dakota frontier. To some his reconstruction of Siberts's story may be unorthodox, for he "put words in [Siberts's] mouth," and yet changed neither anecdote nor experience, and his "worm's eye" view has neither footnote nor bibliography. The popular flavor of *Prairie and Sky* is not the historian's meat, and Wyman's "tampering" with the evidence may chill academic souls, but in cooperation Siberts and Wyman have written a book which can be read with delight. Frontier living was hard in the 1890's, but this book permits us to relax and enjoy it.

Bruce Siberts went to South Dakota fired by a youth's enthusiasm and love of adventure, both of which were dampened by the long end of Paddy's shovel, lice, beans, and a foul Mick foreman on a railroad gang. He bummed his way into Deadwood and quickly out of it; at Pierre he found friendliness and warmth in town and people, and, although he left many times, he always returned to these people of hard lives and overflowing milk of human kindness. Siberts imbibed stronger drink, for he was no saint; the story of the Sunday School whiskey is as vivid and humorous as a superb raconteur could make it. From 1890 to 1906 Siberts lived on the plains as a horse rancher with sheepmen, cattlemen, horse wranglers, drunkards, bums, Indians, homesteaders, townspeople, and farmers. From them he drew a wealth of enjoyable living from which he distilled his stories and developed an unusual insight into human character. Now and then a "tough one" came along, and went just as quickly as Lucky Bill who soon died of Jamaica ginger. Of him a cowhand remarked: " 'If that son of a bitch don't go to hell, there ain't no use having one.' " Speaking of hell, the Dakota prairie was no cooler in summer and its vagaries of weather—blizzard, flood, drouth and freeze—often made its tamers wonder if they would not be better off down below. In his horse ranching Siberts met four-footed devils, too, and learned to treat them with respect, often more than he would give some neighbors. It is the human and not the animal kingdom of which we learn most from Siberts, for he liked people and living with them.

Walker Wyman has put verve into Siberts's anecdote and description and his literary touch marks this narrative of a ranchman's life. The precious rarity of living frontier recollections puts a special value on his editing and rewriting of Siberts's story and rancher and historian fitted like glove and hand to concoct a special item for lighter reading on the rancher's and farmer's frontier of the South Dakota plains.

Raymond E. Lindgren, Occidental College

NEWS NOTES AND COMMENTS

APRIL 1954 MEETING

The Agricultural History Society, meeting with the Mississippi Valley Historical Association in Madison, Wisconsin, held a meeting of the Executive Committee, a joint session with the Association, and the annual business meeting on April 23, 1954. All three meetings were well attended.

The meeting of the Executive Committee, a breakfast session arranged by Herbert A. Kellar, was attended by members of that committee, chairmen of other committees of the Society, and past presidents. In the absence of the president and vice president, Walter H. Ebling presided. The group discussed the financial situation of the Society, allowing trade discounts to periodical agencies, the proposal of University Microfilm for microfilming Agricultural History, bonding the Secretary-Treasurer, and the Edwards Memorial Awards. The Secretary-Treasurer was authorized, by formal vote of the committee, to determine the appropriate discount to offer periodical agencies and to take suitable action. The Secretary-Treasurer was also authorized to expend from year to year the sum necessary to cover a bond in the amount of funds under his control at any one time. The committee approved the University Microfilm proposal, subject to a legal review of the contract. After some discussion, the committee recommended that the Everett E. Edwards Memorial Award offered to an author in the course of taking a

degree henceforth be offered for the best manuscript submitted by such an author.

The joint session of the Mississippi Valley Historical Association and the Society, held the afternoon of April 23, 1954, had as its theme farm problems of the nineteen-twenties. The faith of many farmers in the maker of the Model T was discussed by Reynold M. Wik of Mills College in his paper, "Henry Ford and the Agricultural Depression, 1920–1923," while the beginnings of a government effort to aid farmers was presented by James H. Shideler of the University of California at Davis in his paper, "Herbert Hoover and the Federal Farm Board Project, 1921–1924." The discussion that followed was led by Gilbert C. Fite of the University of Oklahoma, who briefly presented a broad view of the period covered by the papers, and by Benjamin H. Hibbard of the University of Wisconsin, who gave some interesting personal reminiscences of the period. Rodney C. Loehr of the University of Minnesota served as chairman.

The business session, called to order by Walter H. Ebling at the close of the joint session, opened with the reading of the minutes of the 1953 business meeting and the presentation of a financial statement by the Secretary-Treasurer. The report of the Auditing Committee was also presented and accepted. Vernon Carstensen reported on the status of the journal. Mr. Kellar moved that the Society commend Mr. Carstensen and Mr. Rasmussen for their activities on behalf of the Society. The motion was adopted. A motion was then adopted expressing the Society's deepest gratitude to Edward N. Wentworth for his services to the Society.

In connection with activities of the Membership Committee, the Secretary-Treasurer reported that the trend in paid membership had been up since 1951 and that during 1953, 69 new members were enrolled, with a net increase in paid membership over 1952 of 44. After the reading of an informal report of the Committee on A History of World Agriculture, Rodney C. Loehr moved that the Society endorse the proposal. The motion was seconded and passed. Mr. Kellar's following motion that the president of the Society be authorized and directed to make such committee appointments deemed advisable in implementing the proposal also carried. The report of the Committee on Microfilms, drawn up by Tom B. Jones, was presented. At the committee's recommendation and after discussion led by Mr. Kellar, the Society voted to approve a contract with University Microfilms, subject to legal approval of the contract.

Mr. Ebling announced the following committee appointments on behalf of Vice President Charles A. Burmeister: Nominating Committee—Herbert A. Kellar (chairman), Rodney C. Loehr, and James C. Malin; Program Committee for Joint Meeting with American Historical Association in December 1954—Albert V. House (chairman), Robert G. Dunbar, and Edgar L. Erickson; and Program Committee for the Joint Meeting with the Mississippi Valley Historical Association in Spring 1955—Andrew H. Clark (chairman), George Lemmer, and Mildred Throne.

Mr. Carstensen, acting on behalf of William B. Hesseltine, Chairman of the Edwards Memorial Awards Committee, reported that the two awards for 1953 were to Frederick D. Kershner, Jr., for his paper on "George Chaffey and the Irrigation Frontier," and to John T. Schlebecker for his paper on "Grasshoppers in American History." Both authors were present and received the congratulations of the group, after which the meeting was adjourned.

EDWARDS MEMORIAL AWARDS

Beginning with the awards for 1954, the Edwards Memorial Award of fifty dollars offered to an author in the course of taking a degree will be offered for the best manuscript by such an author submitted during the calendar year, whether or not the paper is printed in *Agricultural History* during that calendar year. All manuscripts submitted by an author in the course of taking a degree will be considered both for the award and for publication. Authors in this category should indicate that fact when submitting their manuscripts. The manuscripts should be sent to Vernon Carstensen, Department of Agricultural Economics, University of Wisconsin, Madison 6, Wisconsin. The Edwards Memorial Award of fifty dollars offered to the more advanced scholar will continue to be offered for the best article (presidential addresses excluded) by such a scholar published in *Agricultural History* each year.

The guarantors of the Edwards Memorial Fund, from which the awards are made and to which all interested persons are invited to contribute, have announced with pleasure that they have been joined in their guarantee by Rodney C. Loehr of the University of Minnesota.

CHRISTMAS MEETING WITH A.H.A.

Albert V. House, program chairman, has arranged a joint session of the Agricultural History Society and the American Historical Association for the Christmas meeting in New York on the theme of the impact of urban growth on nearby agriculture in the United States. Carl R. Woodward, University of Rhode Island, will serve as chairman and the following papers are to be read: "Dairying and Urban Development in New York, 1850–1900," by Eric Brunger, College for Teachers at Buffalo; "Technological Change and Farming on the Metropolitan Fringe," by John C. Ellickson, United States Department of Agriculture; and "A Case Study of Urban Impact on Rural Society, Vermont 1840–1880," by T. D. Seymour Bassett, Earlham College.

A luncheon meeting has also been arranged at which Charles A. Burmeister will preside and N. F. McCann, Agricultural Counselor of the British Embassy will speak on the topic, "Laxton Manor—The Open Field System in the Twentieth Century." Both meetings are scheduled for December 28 at the Hotel Commodore.

FINANCIAL STATEMENT, JANUARY 1, 1953 TO DECEMBER 31, 1953, OF THE AGRICULTURAL HISTORY SOCIETY

Amount in checking account, Jan. 1, 1953		$1,675.15
Amount in savings fund, Jan. 1, 1953		1,549.38
Receipts to Dec. 31, 1953:		
Sale of back numbers	$ 645.75	
Sale of reprints	269.99	
1950 dues	4.00	
1951 dues	8.00	
1952 dues	276.00	
1953 dues	1,396.70	
1954 dues	921.60	
1955 dues	4.00	
Life membership	133.00	
Gifts	6.00	
Contributions to Edwards Memorial Fund	125.00	
Advertising	55.00	
Interest	46.82	
Total Receipts		$3,891.86
Total to be accounted for		$7,116.39
Expenditures to Dec. 31, 1953:		
Waverly Press, reprints	198.36	
Waverly Press, printing 6 issues *Agricultural History*	3,544.86	
Postage	135.00	
Letterheads and envelopes	83.66	
Refund on cancelled subscription	4.00	
Payment on joint dues to Economic History Association	70.00	
Checks returned by bank	12.00	
Miscellaneous office expense	1.53	
Total expenditures		$4,049.41
Amount in checking account, Dec. 31, 1953		$1,470.78*
Amount in savings fund, Dec. 31, 1953		$1,596.20
Total accounted for		$7,116.39

* Of this total, $316.37 comprised the Edwards Memorial Fund.

OBERLY MEMORIAL AWARD

The American Library Association has announced that entries are being accepted for the Oberly Memorial Award made every two years for the best bibliography in the field of agriculture or the natural sciences. The current award, to be made in July, 1955, is for a bibliography issued in 1953 or 1954. Typewritten bibliographies are acceptable. To be considered, four copies of the bibliography should be sent to J. Richard Blanchard, Librarian, University of California Library, Davis, California, by March 15, 1955.

PLOW HISTORY CONFERENCE

About fifty delegates from various European countries attended the International Conference for Research on Ploughing Implements at the National Museum in Copenhagen, Denmark, June 1–5, 1954. The principal aim of the conference was to plan the compilation of a world wide encyclopedia of plows. This project was postponed until more data are available from areas in which little research in this field has been carried out. Meanwhile, the National Museum in Copenhagen will act as a repository and clearing house for information bearing on the history and ethnology of plows.

Attending the conference from the United States were Professor Paul Leser of the Hartford Theological Seminary and Edward C. Kendall of the United States National Museum.

ACTIVITIES OF MEMBERS

William D. Barns of the University of West Virginia spent part of the summer of 1953 in Washington, D. C., conducting research on the history of the Grange in West Virginia.

Solon J. Buck, a former president of the Society, was awarded an honorary LL.D. degree by the University of Minnesota at the June Commencement. Dr. Buck retired as Assistant Librarian, Library of Congress, on August 31. He will continue to live in Washington.

H. C. M. Case has returned to the University of Illinois after a sabbatical leave to study trends in agricultural development in the Old South.

Fred C. Cole, dean of the College of Arts and Sciences

in Tulane University, has been appointed to the university's new post of academic vice-president.

Jane Lucas de Grummond of Louisiana State University is the author of "The Jacob Idler Claim Against Venezuela 1817–1890," *The Hispanic American Historical Review*, 34: 131–157 (May, 1954).

Paul W. Gates of Cornell University is the author of "The Railroad Land-Grant Legend," *Journal of Economic History*, 14: 143–146 (Spring, 1954).

H. H. Goldin of the Federal Communications Commission discussed economic and regulatory problems of the broadcasting industry at the December 1953 meeting of the American Economic Association. An abstract appeared in the *American Economic Review*, 44: 686–687 (May, 1954).

Fletcher M. Green of the University of North Carolina has published Part 1 of "Listen to the Eagle Scream: One Hundred Years of the Fourth of July in North Carolina (1776–1876)," *North Carolina Historical Review*, 31: 295–320 (July, 1954).

Barnes F. Lathrop of the University of Texas has been granted a fellowship from the Fund for Advancement of Education and will spend the coming year on research.

Harold T. Pinkett of the National Archives has compiled *Preliminary Inventory of the Records of the Bureau of Plant Industry, Soils, and Agricultural Engineering*, issued by the National Archives as Preliminary Inventory No. 66.

Earle D. Ross of Iowa State College has brought his story of the Iowa State Fair, first published in *The Palimpsest* for August, 1929, up to date with a new chapter. With a reprint of the earlier chapters, appears in the July 1954 issue of *The Palimpsest*, honoring the centennial of the fair.

Paul Sharp, formerly at Iowa State College, is now at the University of Wisconsin. He has received a grant-in-aid from the Social Science Research Council for research on the Whoop-Up Country: a study in Canadian-American regionalism, 1865–85.

Paul S. Taylor, University of California, is the author of "Plantation Agriculture in the United States: Seventeenth to Twentieth Centuries," *Land Economics*, 30: 141–152 (May, 1954). His article on "Can We Export 'The New Rural Society'?" was published in Rural Sociology, 19· 13–20 (March 1954).

Robert L. Tontz of Oklahoma A. & M. College discusses "Data Needed for Soil Conservation Economics Policy," in *Journal of Farm Economics*, 36: 309–316 (May, 1954).

Orion Ulrey of Michigan State College has been granted a leave of absence, effective September 1, 1954, to accept a Fulbright scholarship in Pakistan.

Lazar Volin of the United States Department of Agriculture is the author of "The Malenkov-Khrushchev New Economic Policy," *Journal of Political Economy*, 62: 187–209 (June, 1954).

Colonel Edward N. Wentworth, president of the Society, retired as Director of Armour's Livestock Bureau on August 28. Colonel Wentworth joined Armour and Company in 1919 and became head of the Livestock Bureau in 1923. He will reside at his home near Chesterton, Indiana.

Reynold M. Wik of Mills College spent part of the summer of 1953 in the South examining newspaper collections and interviewing Ford automobile dealers in connection with his study of Ford and the American farmer.

The February, 1954, issue of the monthly magazine, *Current History*, is devoted to a series of articles which constitute a survey of the history of United States agriculture. The articles include "Agriculture in Transition," by Louis B. Schmidt; "Equality for the Farmer," by Gilbert C. Fite; "The Farmer's New Deal," by Theodore Saloutos; and "Farm Welfare, 1954," by Norman A. Graebner.

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